

MEMORANDUM

DATE: July 1, 2019

PREPARED BY: James R. Kuipers, P.E., & Bruno A. Ridolfi, P.E.

SUBJECT: Inaccurate and misleading statements of Purpose and Need in the

Proposed Pebble Project DEIS

Executive Summary

The comments in this memorandum pertain to the inaccurate and misleading statements contained in the DEIS with respect to the Purpose and Need for the proposed Pebble Project. This memorandum also includes other comments on Section 1 of the DEIS. The purpose and need evaluation and discussion are the foundation of the USACE regulatory process and an EIS. Based on the overly limited nature of the purpose and need statement in the DEIS, the lack of supportable economics for the proposed project, and the absence of a valid array of alternatives, the USACE should either decide that the proposed project is too speculative and halt the environmental review process or undertake a complete revision of the DEIS including a revision of the purpose and need evaluation for the project and prepare and recirculate a revised DEIS to cooperating agencies and the public for review and comment.

DEIS General Comments

Language and Accessibility

An EIS should be clearly written for public review and use accessible language. Even in the introductory section of the Pebble DEIS, there is an overuse of jargon and acronyms. This is especially troublesome for Alaska Native residents in the Bristol Bay region whose first language is their native tongue. The DEIS should be revised to minimize the use of acronyms and ensure that the language used is accessible to the people of the affected communities and the public.

This section is incomplete as written. It is typical in an EIS to include the following information in Chapter 1.0 Purpose and Need:

Background



The background section should provide a general description of the proposed project area including its location related to major towns and cities, watersheds, areas of special interest (e.g. national parks, wilderness areas, state parks), and a concise description of the project's proposed production. This section should include information about the original project discovery and the various developments that have occurred prior to the application for a permit that initiated this EIS. This should include discussion about previous project proposals as well as associated evaluations by EPA and other regulatory agencies concerning the proposal for mining of the Pebble deposit. It should include information about the project proponent including their history and address their capacity, such as whether they are an existing reputable mining company with currently active mining operations, or whether this would be their first and only operation. This section should also disclose to what extent, if any, a completeness review was conducted on the proponent's application for a permit, prior to initiation of the NEPA process. The USACE should revise the DEIS to include the essential background information that's described above.

Decisions to be Made

In addition to describing the decisions to be made by the USACE, this section should identify all the other regulatory agencies with decision making authority, what the authorities are, and when and how compliance will be achieve with the applicable regulations. The USACE should revise the DEIS to include the information described above pertaining to regulatory agencies, regulatory decisions that must be made, and compliance with applicable regulations.

Significant Issues

With respect to an EIS, issues are points of discussion, debate, or dispute with respect to the environmental impacts of the proposed action. Issues may be determined to be significant based on the extent, duration, or magnitude of the environmental effect. Significant issues focus the environmental analyses in the EIS on those aspects of the project that are of the greatest concern to regulatory agencies or the public or that have the most potential for producing adverse environmental effects. Alternatives to the proposed action or specific mitigation measures are developed in response to significant issues. By associating measures with individual issues, the public and decision-makers are better able to differentiate among different alternatives in terms of environmental impacts. The significant issues based on public, tribal, and agency comments made during the scoping process should be summarized in this section. The summary for each issue should describe the measures to be used to assess each of the issues across alternatives at the end of each item. Furthermore, it is rare that so many interested and commenting parties agree on the issues and concerns. Therefore, the USACE should revise the

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DEIS to display the issues and concerns described above and discuss how USACE will address these issues and concerns in the permit evaluation process and decision-making process.

Agency Responsibilities, Approvals and Compliance

This section typically describes the primary roles of each agency involved in developing the EIS. Chapter 1 should include information on the EIS scoping, public involvement, and government-to-government consultations with tribes. The USACE should revise the DEIS to include information regarding the roles of regulatory agencies involved in the EIS process, EIS scoping, public involvement, and government-to-government consultation with Alaska Native tribes.

DEIS Detailed Comments

The Purpose and Need section of an EIS is considered by many to be the most important part, as it speaks to and in fact should direct the remainder of the EIS in terms of alternatives development and analysis, impacts evaluation, and mitigation.

As noted in the following comments and in the attached memorandum: *Technical Review of Economic Feasibility of Proposed Pebble Project* (Attachment 5A), the proposed Pebble Project is highly speculative. There is not a clear need to support the purpose relative to the site-specific nature of the proposal. Simply put, there are other places in the world where copper, gold, and molybdenum could be mined with far less environmental impact than in the proposed location.

According to Section 1.5 of the DEIS: "PLP's (the applicant) stated need for the proposed project is, 'to meet the increasing global demand for commodities such as copper, gold, and molybdenum." (DEIS at 1-3). It goes on to say: "Any overall purpose must seem feasible as well as take into account the need for the type of proposed development. The USACE has determined that the overall project purpose is to develop and operate a copper, gold, and molybdenum mine in Alaska in order to meet current and future demand." (DEIS at 1-4).

This section fails to take into account the need for the type of proposed development. This section demonstrates neither a need for the project in Alaska nor in the United States. The DEIS should have noted that the primary commodities to be produced by the project (copper, gold, and molybdenum) are not considered by the United States to be "critical minerals." Pursuant to Executive Order 13817 dated December 20, 2017, "A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals," the Secretary of the Interior on May 18, 2018 presented a final list of 35 mineral commodities deemed critical under the definition provided in the



Executive Order.¹ The final list was prefaced by an explanation of critical minerals as follows: "The United States is heavily reliant on imports of certain mineral commodities that are vital to the Nation's security and economic prosperity. This dependency of the United States on foreign sources creates a strategic vulnerability for both its economy and military to adverse foreign government action, natural disaster, and other events that can disrupt supply of these key minerals." (83 Fed. Reg. at 23,295).

The Final List of Critical Minerals includes: Aluminum (bauxite), antimony, arsenic, barite, beryllium, bismuth, cesium, chromium, cobalt, fluorspar, gallium, germanium, graphite (natural), hafnium, helium, indium, lithium, magnesium, manganese, niobium, platinum group metals, potash, the rare earth elements group, rhenium, rubidium, scandium, strontium, tantalum, tellurium, tin, titanium, tungsten, uranium, vanadium, and zirconium.

The United States is currently, and for the foreseeable future, a global supplier of copper, gold, and molybdenum as the country's current and future planned production exceeds demand, and domestic production is diverse. With respect to the USACE's determined overall project purpose, there is no apparent need in the United States, including Alaska, for an additional copper, gold, or molybdenum mine to meet current or future domestic demand. It is not the role or responsibility of the USACE to address global demand or to speculate on future global demand for these metals. The USACE should address in the DEIS this potential conflict between current uses of natural resources and the expected sacrifice of these resources to accommodate the mine and facilities of the proposed project. The USACE should consider whether there is in fact a legitimate need for the proposed project that outweighs the significant impacts to and permanent and irreversible loss of natural resources that would be caused if the proposed project is permitted, constructed, and operated.

Since the need for this project is predicated on global supply and demand, and because the potential environmental impacts are great, a better case needs to be made that the proposed project is necessary to meet global requirements for these minerals. In the context of the DEIS, simply discussing whether there is adequate supply of such metals is insufficient; the DEIS also needs to address whether there are other practicable alternatives for meeting this apparent demand that would be less environmentally damaging.

¹ Final List of Critical Minerals 2018, 83 Fed. Reg. 23,295 (May 18, 2018).



The reasons for and implications of the USACE's change in the wording of the project's purpose and need are unclear; however, the wording seems to be designed to inappropriately limit the scope of potential alternatives for review. The purpose of the project cannot simply be to "develop and operate a copper, gold, and molybdenum mine in Alaska," since there is no particular need to have such a mine specifically located in Alaska, and project alternatives that could be sited elsewhere in Alaska are not discussed. The addition of "in Alaska" implies that the only practicable alternatives that would be considered are those located in Alaska; however, according to the applicant's own description, the demand being addressed is both national and global. Therefore, the USACE should include other alternatives both nationally and globally for meeting this demand and evaluate these alternatives in a revised DEIS. Such alternatives would include other projects throughout the world that would produce copper, molybdenum, or gold and are already under development or being proposed.

Consideration of global purpose and need is particularly appropriate considering the natural resources and human resources that could be adversely affected if the proposed project is permitted, constructed, and operated. Bristol Bay has globally important aquatic resources, economically important fisheries, and world-renowned wildlife resources all of which are untouched by development. There are several National Parks and National Wildlife Refuges in the proposed project area that contain irreplaceable resources. Alaska Native cultural ways of life are intrinsically place-based, and once adversely impacted or destroyed, these cultural lifeways are also irreplaceable. Mining projects are an intense land use and are intrinsically destructive; therefore, the proposed project in the proposed location will cause serious multigenerational adverse impacts on Native American communities that cannot be mitigated or restored. Avoidance of these impacts through careful consideration of the need for this project is essential.

Conclusions and Recommendations

The purpose and need statement in the DEIS for the proposed Pebble Project does not respect the critical nature or importance of purpose and need information as the underlying foundation of an EIS.

Based on speculative project economics, as demonstrated by the attached economic feasibility analysis (Attachment 5A), the USACE should conclude that the purpose of the proposed project is too speculative and halt the environmental review process.



If the USACE decides to continue the environmental review process, the USACE needs to thoroughly revise the DEIS and redistribute the revised DEIS to cooperating agencies and the public for review and comment.

The revised DEIS should include the sections and information described above and <u>address</u> <u>comments provided in this memorandum and previously in similar memoranda submitted to the USACE during our review of the Preliminary DEIS</u>.

Given the level and relevance of public interest in this proposed project, the USACE needs to invest substantially more effort in developing the justification for the project, and that justification should include weighing the purpose and need for this project against the purpose and need to protect the existing resource values including natural resources, human uses and values, and cultural resources of the Bristol Bay Region.

Application Description

A two-paragraph description of the permit application is insufficient and inadequate for a project of this size. The USACE should revise the DEIS to significantly expand the project description with maps, figures, and a more detailed description of each major project element. Portions of the Project Description with accompanying figures that were provided as Attachment D to the permit application would be appropriate for this purpose. As a public review DEIS for such a significant project, the public should be provided with a clear and complete description of the entire project, without having to search through attachments and appendices to learn what the proposed project consists of.

Federal Decisions to be Made

The <u>USACE</u> needs to revise Section 1.3 or Section 1.4 to identify independent public review processes and opportunities for comment associated with the U.S. Coast Guard (USCG) and Bureau of Safety and Environmental Enforcement (BSEE) decisions.

While USCG and BSEE might be the only other federal agencies with direct permitting authority, there are requirements for consultation with other federal agencies (e.g., natural resource trustees) and state agencies, as well as consultation with Alaska Native governments. State and local agencies also have a permitting role for the project. The USACE should revise the DEIS to describe these other permitting processes and their relationship to the federal permitting process.



Environmental Analysis

The USACE is required by law to develop a range of alternatives to address major issues. NEPA requires the agency to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources" 42 U.S.C. § 4332(E). The USACE must "[r]igorously explore and objectively evaluate all reasonable alternatives" to the proposed action. 40 C.F.R. § 1502.14(a). Indeed, NEPA's implementing regulations recognize that the "consideration of alternatives is 'the heart of the environmental impact statement.'" *Alaska Wilderness Recreation and Tourism Association v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995) (quoting 40 C.F.R. § 1502.14). In this case, as identified in our comments on Chapter 2 of the PDEIS, the USACE fails to meet this requirement.

The proposed project cannot be implemented in a manner that avoids the potential for significant and irreversible environmental harm. The proposed project is just too large in scope, magnitude and intensity. It is also clear that potential impacts of constructing and operating the proposed project elements cannot be mitigated in a reasonable manner. The USACE should revise this section to be more specific about whether and under what circumstances the environmental analysis could result in a decision that the project would not be permitted. Currently, the DIES reads as though the USACE must select one of the action alternatives, i.e., that the agencies' only responsibility is to identify and select "the least environmentally damaging practicable alternative" and cannot select the No Action Alternative. Yet, it may be the case that the only "practicable means to avoid or minimize environmental harm" is to select the No Action Alternative and do not permit the proposed project. This section needs to be more specific about whether this falls within the scope of the USACE decision authority.

Attachment 5A: Technical Review of Economic Feasibility of Proposed Pebble

MEMORANDUM

DATE: May 1, 2019

PREPARED BY: James R. Kuipers, P.E., Kuipers & Associates

SUBJECT: Technical Review of Economic Feasibility of Proposed Pebble Project

Executive Summary

The findings of this technical review of the Economic Feasibility of the proposed Pebble Project are summarized as follows:

Project Economic Viability

The Wardrop 2011 Preliminary Assessment (PA) and Northern Dynasty Minerals Ltd. (NDML) 2018 Technical Report (TR) both rely on Mineral Resource estimates rather than Mineral Reserve estimates. As noted by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), "Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability." Based on the information provided, the project has not demonstrated economic viability according to the standard of professional care required by accepted industry standards such as NI 43-101. Neither the Wardrop 2011 PA nor the NDML 2018 TR should be considered a prefeasibility or feasibility study, since the economics and technical viability of the proposed Pebble Project have not been demonstrated at this time.

Technical and Economics Project Risks

Metals prices are a significant risk factor for the Pebble Project. Given the extremely high capital costs for the proposed Pebble Project combined with uncertainty as to the timing and price of future demand for metals commodities, the proposed Pebble Project carries a significant risk of economically failing due to variable metals prices, particularly in the first 5 to 10 years of the project's life.

While the Waldrop 2011 PA identified metal price sensitivity as having the greatest impact on project economics, it is clear given the current trend of significant underestimation of capital and operating costs, when likelihood is considered, there is a greater risk from capital and operating cost overruns to the proposed Pebble Project than for any other economic risk factor. Capital and operating cost concerns have caused many existing projects to be currently delayed,

Proposed Pebble Project DEIS Technical Review of Economic Feasibility Technical Memorandum No. 5, Attachment 5A and alternative approaches, particularly using underground mining to reduce initial capital costs and access higher grade ore, are commonly being considered to address this economic challenge.

Reclamation and closure costs are expected to be great for the proposed project, and the financial assurance requirements for the proposed project are likely to exceed \$1.5 billion. While not having the same impact as metals prices or capital and operating costs, the cost of providing financial assurance for reclamation and closure will have a definite impact on project economics and therefore this cost is an economic risk factor.

Project Alternatives

It is rare for a mining company to perform a feasibility analysis that does not contemplate exploitation of the entire resource. The Wardrop 2011 PA is constrained to the use of open pit mining methods and may represent the maximum reasonable extent to which the Pebble Project could be developed using open pit mining methods. Based on the information available, there is an equally high probability that if the proposed Pebble Project is ultimately permitted, the majority of the resource would be developed using underground mining methods, including potentially the initial underground mining of the resource, to reduce capital costs and access higher grades of ore early in project development.

Given the present marginal project economics, it is highly likely that the proposed Pebble Project will consider increasing the production rate beyond that contemplated in the 2011 Wardrop PA as a means of improving project economics. It would not be unusual for the increased production rate to be proposed after permitting is completed but before actual construction begins.

Introduction

This review of the economic feasibility of the proposed Pebble Project is intended to address the following questions:

- Has the project been demonstrated to be economically feasible based on NI 43-101 Guidelines?
- Has the project been demonstrated to be economically feasible based on industry standards?
- What are the major technical and financial risks to the project?

What are the potential actual development plans for the project?

Qualifications

I have an extensive background with more than 35 years involvement in mining metals and minerals including in the full-life cycle of exploration, project development, project permitting, construction, operations, reclamation, and closure. I graduated in 1983 with a B.S. in Mineral Processing from Montana School of Mines. In addition to growing up in a mining family and gaining practical experience prior to entering University, I have worked as a senior engineer, chief metallurgist, mill superintendent, mine manager, project manager, and consulting engineer. Since 1996 I have been the principal consulting engineer with Kuipers & Associates. My work during that time has focused on providing technical expertise to public interest groups, tribes and first nations, and governments concerning mining and environmental concerns. The primary areas of expertise in which I have provided services include site characterization, water quality predictions, mine planning and mitigation, tailing storage facilities, mine reclamation and closure, site investigations and remediation, water treatment, financial assurance, and economic evaluations.

I am a registered Professional Engineer in Mining in the States of Montana and Colorado. I have been qualified as an expert witness in mining and related matters in several administrative hearings in the U.S. and Canada, and I have been qualified as an expert witness in U.S. Federal and State Courts. I have conducted numerous feasibility analysis analyses and extensive reviews of similar projects throughout my professional career. I am very familiar with the NI 43-101 Guidelines¹ and meet the definition of a "qualified person" consistent with the guidelines. My professional resume is attached as Attachment 5A-1.

Documents and Other Information Relied Upon

The primary documents that I have reviewed in conducting this analysis were:

- (Wardrop 2011 PA) Preliminary Assessment of the Pebble Project, Southwest Alaska,
 Wardrop for Northern Dynasty Minerals Ltd., Issue Date: February 17th, 2011.
- (NDML 2018 TR) Technical Report on the Pebble Project, Southwest Alaska, USA, Northern Dynasty Minerals Ltd, Issue date February 22, 2018.

¹ National Instrument 43-101 Standards of Disclosure for Mineral Projects, Rules and Policies, June 24, 2011. http://web.cim.org/standards/documents/block484_doc111.pdf

In addition, I have relied on other documents as referenced in this report.

Summary of Primary Documents

The following sections summarize the information on resources and economic feasibility contained in the Wardrop 2011 PA and NDML 2018 TR.

Wardrop 2011 PA

The Wardrop 2011 PA estimated mineral resources for the Pebble Project as shown in Table 1. Estimated measured and indicated mineral resources total 6.5 billion tonnes with a copper equivalent (CuEq) grade of 0.76 percent containing 98.1 billion CuEq pounds. Estimated inferred mineral resources total 4.5 billion tonnes with a CuEq grade of 0.55 percent containing 49.0 billion CuEq pounds. The total mineral resource is estimated to be 10.9 billion tonnes with CuEq grade of 0.67 percent containing 147.1 billion CuEq pounds.

Table 1. 0.3% CuEq Cutoff Resource Estimate Pebble Project Mineral Resources (2011)

Category	Tonnage	Cu (%)	Au (g/t)	Mo (ppm)	Cu Blb.	Au Moz.	Mo Blb.	CuEq (%)	CuEq Blb.
Measured + Indicated	5,942,000,000	0.42	0.35	250	55.0	66.9	3.28	0.78	102.2
Inferred	4,835,000,000	0.24	0.26	215	25.6	40.40	2.29	0.53	56.5
Total	10,777,000,000	0.37	0.31	235	80.6	107.3	5.57	0.74	158.7

% = percent

Au = gold

g/t = grams per metric ton Moz. = millions of ounces

Blb. = billions of pounds
Mo = molybdendum

Cu = copper

ppm = parts per million

The Wardrop 2011 PA considered three production cases based on an initial open pit mine and subsequent expansion of the mine in two phases. The three production cases are described as follows:

- 1. The Investment Decision Case (IDC Case), which describes an initial 25-year open pit mine life upon which a decision to initiate mine permitting, construction and operations may be based
- 2. The Reference Case, which is based on 45 years of open pit mine production
- 3. The Resource Case, which is based on 78 years of open pit mine production and seeks to assess the long-term value of the project in current dollars

The summary of production results for the three cases is shown in Table 2.

The 25-year IDC Case would mine 80M ton/year of ore at a waste-to-ore (waste:ore) ratio of 1.5; process a total of 2.0 billion tons with a CuEq grade of 0.72%; and produce 12.9B pounds (lbs.) of copper, 16.4 M ounces (Moz.) of gold and 616 Mlbs. of molybdenum, as well as 67 Moz. of silver, 502,000 kilograms (kg) of rhenium, and 385,000 oz. of palladium.

Table 2. Pebble Project Summary of Production Results – All Cases (Wardrop 2011 PA Table 1.1.1)

ltem	Unit	IDC Case	45-Yr Resource Case	78-Yr Resource Case
Mine Life	years	25	45	78
Mining Method		Open Pit	Open Pit	Open Pit
Production Rate	M t/year	80	84	84
Strip Ratio	waste : ore	1.5	2.1	2.6
Total Processed	Mt	1,990	3,767	6,528
% of M+I+I Resource	%	17	32	55
Cur Eq. Grade	%	0.72	0.83	0.84
Cu Grade	%	0.38	0.46	0.46
Au Grade	oz./M t	0.012	0.011	0.011
Mo Grade	ppm	182	214	243
Cu Recovery	%	86.6	87.9	88.4
Au Recovery	%	71.5	71.3	71.2
Mo Recovery	%	84.8	87.9	89.4
Cu Equivalent Recovered	M lb.	24,483	54,129	96,357
Cu Recovered	M lb.	12,944	30,494	53,437
Au Recovered	k oz.	16,391	30,307	50,133
Molybdenum Recovered	M lb.	616	1,420	2,835
Peak Annual Cu Recovered	M lb.	822	1,157	1,096
Peak Annual Au Recovered	k oz.	1,038	1,127	1,088
Peak Annual Mo Recovered	M lb.	43	56	62
Avg. Annual Cu Recovered	M lb.	518	678	685
Avg. Annual Au Recovered	k oz.	656	673	643
Avg. Annual Mo Recovered	M lb.	25	32	36
26% Cu Concentrate Produced	k dmt	22,582	53,200	93,225
52% Mo Concentrate Produced	k dmt	537	1,239	2,473

% = percent dmt = dry metric tonnes

IDC = Investment Decision Case

k = thousands

lbs. = pounds

M = millions

oz. = ounces

ppm = parts per million

t = metric ton waste:ore = waste-to-ore ratio

The 45-year IDC Case would mine 84 M metric ton/year of ore at a waste:ore ratio of 2.1; process a total of 3.8 billion tons with a CuEq grade of 0.83%; and produce 30.5 B lbs. of copper,

30.3 Moz. of gold, and 1.4B lbs. of molybdenum, as well as 140 M oz of silver, 1.2 M kg of rhenium, and 907,000 oz of palladium.

The 78-year IDC Case would mine 84M metric ton/year of ore at a waste:ore ratio of 2.6; process a total of 6.5 billion tons with a CuEq grade of 0.84%; and produce 53.4B lbs. of copper, 50.1M oz of gold, and 2.8B lbs. of molybdenum, as well as 242M oz of silver, 2.3M kg of rhenium, and 1.59M oz of palladium.

The economic analysis used the metal price assumptions shown in Table 3. The analysis uses both "long-term metal prices" and "current prevailing metal prices" based on the definition of these prices at that time.

Table 3. Pebble Project Metals Price Assumptions from Wardrop 2011 PA Table 1.1.2

Metal Type	Unit	Long-term Metal Prices	Current Prevailing Metal Prices
Copper	\$/lb.	2.5	4
Gold	\$/oz.	1,050	1,350
Molybdenum	\$/lb.	13.5	15
Silver	\$/oz.	15	28
Rhenium	\$/kg.	3,000	3,000
Palladium	\$/oz.	490	490

\$/kg = US dollar per kilogram

\$/lb. = US dollars per pound

\$/oz. = US dollars per ounce

The 25-, 45-, and 78-year cases would result in mining 17%, 32% and 55%, respectively of the total mineral resource. The Wardrop 2011 PA makes note of the inclusion of inferred resources in the three cases. Inferred resources included in the 25-, 45-, and 78-year cases are 16%, 28%, and 33%, respectively of the total ore mined. The document provides the following disclaimer in this regard:

The Pebble Project financial results are summarized in Table 4. The results based on the "long-term metal prices" assumptions are summarized as follows:

- The 25-Year IDC Case achieves a Life of Mine (LOM) pre-tax net cash flow of \$20.1 billion, Net Present Value (NPV) at 7% of \$3.8 billion, an Internal Rate of Return (IRR) of 13.4%, and a payback period of 6.5 years.
- The 45-year Reference Case achieves a LOM pre-tax net cash flow of \$55.3 billion, NPV at 7% of \$6.1 billion, an IRR of 14.2%, and a payback period of 6.2 years.

The 78-year Resource Case achieves a LOM pre-tax net cash flow of \$87.3 billion, NPV of \$6.8 billion, an IRR of 14.5%, and a payback period of 6.1 years.

The Wardrop 2011 PA included a sensitivity analysis that suggested that for all three cases the project pre-tax NPV (at a 7% discount rate) is most sensitive to metal prices, operating costs, and capital costs in decreasing order.

Table 4. Pebble Project Summary Financial Results – All Cases from Wardrop 2011 PA **Table 1.1.3**

14	11	IDC Corr	45-Yr Resource	78-Yr Resource Case	
ltem	Unit	IDC Case	Case		
Mine Life	years	25	45	78	
Mining Method		Open Pit	Open Pit	Open Pit	
Initial Capital	\$ M	4,695	4,695	4,695	
LOM Sustaining Capital	\$ M	3,204	6,140	11,727	
LOM NSR	\$ M	54,637	120,197	213,970	
NSR Per Ton	\$/t	27.45	31.91	32.78	
LOM Operating Cost	\$ M	22,208	43,489	96,063	
Operating Cost Per Ton	\$/t	11.16	11.55	14.72	
C1 Copper Cost	\$/lb.	-0.1	-0.11	0.21	
LOM Pre-Tax Net Cash	\$ M	20,123	55,278	87,329	
Long-term Metal Prices					
Pre-Tax NPV at 7%	\$ M	3,837	6,129	6,812	
Pre-Tax IRR	%	13.40%	14.20%	14.50%	
Pre-Tax Payback	years	6.5	6.2	6.1	
Current Prevailing Metal					
Pre-Tax NPV at 7%	\$ M	11,410	15,709	16,864	
Pre-Tax IRR	%	22.60%	23.20%	23.30%	
Pre-Tax Payback	years	3.2	3.2	3.2	

\$ = US dollars lb. = pound

% = percent

LOM = life of mine

NSR = net smelter return

IDC = Investment Decision Case

IRR = internal rate of return

M = million

t = metric ton

NPV = net present value

NDML 2018 TR

The NDML 2018 TR is a re-evaluation of the estimated mineral resources for the proposed Pebble Project. The results from the NDML 2018 TR are summarized in Table 5. Estimated measured and indicated mineral resources total 6.5 billion tonnes with a CuEq grade of 0.76% containing 98.1 billion CuEq pounds. Estimated inferred mineral resources total 4.5 billion tonnes with a CuEq grade of 0.55% containing 49.0 billion CuEq pounds. The total mineral

resource is estimated to be 10.9 billion tonnes with a CuEq grade of 0.67% containing 147.1 billion CuEq pounds.

Compared to the Wardrop 2011 PA, the revised resource estimate in the NDML 2018 TR adds only 0.1 billion tonnes to the resource estimate. The primary difference is due to the NDML estimate shifting approximately 0.5 billion tonnes from the inferred category to the measured and indicated category; however, this actually decreases the contained CuEq from 102.2 billion pounds to 98.1 billion pounds. Perhaps most notably, the NDML 2018 TR suggests that further evaluation of the mineral resource has led to a decrease in total resources from 159 billion pounds in 2011, to 147 billion pounds in 2018, a decrease of approximately 8 percent.

Table 5. Pebble Project Mineral Resources 0.3% CuEq Cutoff Resource Estimate (2018)

Category	Tonnage	Cu (%)	Au (g/t)	Mo (ppm)	Ag (g/t)	Cu Blb	Au Moz	Mo Blb	Ag Moz	CuEq (%)	CuEq Blb
Measured + Indicated	6,456,000,000	0.40	0.34	240	1.7	56.92	70.57	3.42	344.6	0.76	98.1
Inferred	4,454,000,000	0.25	0.25	226	1.2	24.54	35.80	2.22	170.4	0.55	49.0
Total	10,910,000,000	0.37	0.30	235	1.5	81.46	106.37	5.64	515.0	0.67	147.1

% = percent

Aq = silver

Au = gold

Blb. = billions of pounds

Cu = copper

g/t = grams per metric ton Moz. = millions of ounces

Mo = molybdenum

ppm = parts per million

Project Economic Viability

The Wardrop 2011 PA includes a disclaimer regarding economic viability as previously noted and repeated here:

"(It should be noted that Inferred mineral resources are considered to be too speculative to allow the application of technical and economic parameters to support mine planning and the evaluation of the economic viability of the project. As such, there is currently no certainty that development cases incorporating Inferred mineral resources can be realized)."

As was noted in both reports, the Mineral Resource estimates were conducted following the CIM Definitions Standards for Mineral Reserves in accordance with NI 43-101 Standards of Disclosure for Mineral Projects. The CIM Definitions Standards specifically contain the following information with respect to mineral resources and mineral reserves, as well as indicated and inferred mineral resources.

Mineral Reserve

A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource. It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors. Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified. The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study.

Mineral Resource

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are reasonable prospects for eventual economic extraction.

Inferred Mineral Resource

An "Inferred Mineral Resource" is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

Due to the uncertainty that may be attached to Inferred Mineral Resources, it cannot be assumed that all or any part of an Inferred Mineral Resource will be upgraded to an Indicated or Measured Mineral Resource as a result of continued exploration. Confidence in the estimate is insufficient to allow the meaningful application of technical and economic parameters or to enable an evaluation of economic viability worthy of public disclosure. Inferred Mineral Resources must be excluded from estimates forming the basis of feasibility or other economic studies.

Indicated Mineral Resource

An "Indicated Mineral Resource" is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics, can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits,

workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

Mineralization may be classified as an Indicated Mineral Resource by the Qualified Person when the nature, quality, quantity and distribution of data are such as to allow confident interpretation of the geological framework and to reasonably assume the continuity of mineralization. The Qualified Person must recognize the importance of the Indicated Mineral Resource category to the advancement of the feasibility of the project. An Indicated Mineral Resource estimate is of sufficient quality to support a Preliminary Feasibility Study which can serve as the basis for major development decisions.

Conclusions

- The Wardrop 2011 PA and NDML 2018 TR both rely on Mineral Resource estimates
 rather than Mineral Reserve estimate. In addition, the Wardrop 2011 PA and NDML 2018
 TR both rely in part on inferred rather than indicated mineral resources in the Mineral
 Resource estimates.
- As noted by CIM, "Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability." Neither the Wardrop 2011 PA nor the NDML 2018 TR should be considered a prefeasibility or feasibility study, as the economics and technical viability of the Project have not been demonstrated at this time. The PA is preliminary in nature and is based on Mineral Resources that are considered too speculative geologically to have the economic considerations applied that would enable these Mineral Resources to be categorized as Mineral Reserves. Furthermore, there is no certainty that the conclusions or results as reported in the PA will be realized.
- Based on my professional experience and knowledge, the conduct of any type of
 feasibility analysis based on mineral resources, and not on verifiable mineral reserves, is
 rarely performed and represents a questionable undertaking by a qualified person. Based
 on the information provided, the project has not demonstrated economic viability
 according to the standard of professional care required by accepted industry standards
 such as NI 43-101.

Major Technical and Financial Risks

As previously noted, the Wardrop 2011 PA included a sensitivity analysis that suggested the project NPV is most sensitive to metal prices, operating costs, and capital costs in descending

order. In addition, several major technical and financial risks exist for the proposed project including the costs of reclamation and closure and the project's social license. These risks are discussed in the following sections.

To assist in the assessment of these risks from an economics standpoint, each section within the Wardrop 2011 PA was reviewed, and the information was entered into an Excel spreadsheet to create a project economic pro forma. That information was then compared to the economic analysis information contained in the Wardrop 2011 PA.

The development of the Excel spreadsheet model was complicated by the abbreviated summary spreadsheets contained in the Wardrop 2011 PA. Instead of annual data as is usually provided for feasibility studies, the data represented periods of time and summarized production quantities and costs for the 78-year case. These data had to be extrapolated downward for the 45-year and 25-year cases. In addition, costs that were indicated for royalties and "local production taxes" and were clearly present in the cash flow analysis were not identified as line items in the information contained in the report. The royalties to TECK were identified in the report and applied to the Excel model as 4% pre-payback and 5% post-payback. "Local production taxes" were assumed to be gross expenditures and proceeds taxes of 5% applied to both operating profit and initial and sustaining capital expenditures. The Wardrop 2011 PA may have included provisions for reclamation and closure cost accrual; however, those costs were not identified or incorporated in the Excel model.

The Excel spreadsheet duplicated the Wardrop 2011 PA results is shown in Table 6. The detailed spreadsheets showing the information used is provided as Attachment 5A-2.

For the 25-year case, the net revenue in the Wardrop 2011 PA is \$20.1 billion as compared to a net revenue of \$18.2 billion in the Excel spreadsheet for the 20-year 2018 proposed mine for the EIS. This represents a difference of minus 9 percent (-9%). The NPV at 7 percent net discounted rate of return (NDROR) is \$3.8 billion as compared to \$3.6 billion, a difference of minus 5 percent (-5%). The Internal Rate of Return (IRR) is 13.4 percent as compared to 13.4 percent.

Table 6. Wardrop 2011 PA and K&A Spreadsheet Comparison Long-Term Metals Prices

		25-yea	r Case	45-yeaı	· Case	78-yea	r Case
Result	Units	Wardrop 2018 PA	K&A	Wardrop 2018 PA	K&A	Wardrop 2018 PA	K&A
NPV @ 0% DROR	\$M	20,123	18,203	55,278	52,111	87,329	88,689
NPV @ 5% DROR	\$M	6,363	5,975	11,163	11,311	12,941	13,899

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NPV @ 7% DROR	\$M	3,837	3,640	6,129	6,360	6,812	7,526
NPV @ 8% DROR	\$M	2,901	2,764	4,510	4,737	4,964	5,576
NPV @ 10% DROR	\$M	1,485	1,425	2,308	2,501	2,545	2,995
IRR	%	13.4	13.4	14.2	14.5	14.5	15.2
Payback	years	6.2	6.3	6.2	6.3	6.1	6.3

\$M = millions of US dollars K&A = Kuipers & Associates DROR = discounted rate of return

NPV = net present value

IRR = internal rate of return
PA = Preliminary Assessment

For the 45-year case (6.5 B tonnes), the net revenue in the Wardrop 2011 PA is \$55.3 billion as compared to \$52.1 billion for the 20-year case (6.4B tonnes) in the Excel spreadsheet or a difference of minus 6 percent (-6%). The NPV at 7 percent net discounted rate of return

(NDROR) is \$6.1 billion as compared to \$6.4 billion or a difference of plus 5 percent (+5%). The Internal Rate of Return (IRR) is 14.2 percent as compared to 14.5 percent or a difference of plus 2 percent (+3%)

2 percent (+2%).

For the 78-year case, the net revenue in the Wardrop 2011 PA is \$87.3 billion as compared to \$88.7 billion in the Excel Spreadsheet or a difference of plus 2 percent (+2%). The NPV at 7 percent net discounted rate of return (NDROR) is \$6.8 billion as compared to \$7.5 billion or a difference of plus 10 percent (+10%). The Internal Rate of Return (IRR) is 14.5 percent as compared to 15.2 percent or a difference of plus 5 percent (+5%).

The comparison shows that costs are present in the Wardrop 2011 PA that were not identifiable as line items and therefore are not exactly duplicated in the spreadsheet. This results in the spreadsheet showing slightly different results. Keeping the initial differences in mind, the spreadsheet model can be used to draw similarly comparative distinctions for the cost scenarios depicted in the following sections of this report.

Metal Prices

As was noted in the Waldrop 2011 PA, the economics for the proposed Pebble Project are most sensitive to metals prices. For example, for the 78-year case, instead of a pre-tax NPV at 7% DROR of \$6.8 billion and IRR of 14.5 percent, a decrease in metals prices of 20 percent for both copper and gold would result in a pre-tax NPV at 7% DROR of approximately \$2.0 billion and IRR of 10.5 percent.

Table 7 compares the metal prices used in the Waldrop 2011 PA with current metals prices. At the time of the Waldrop 2011 PA, current metals prices still reflected the previous decade's metals commodity super-cycle with then current prices for all but rhenium and palladium

showing a significant increase over what was then predicted to be long-term metals prices. The current prevailing metals prices (April 15, 2019, http://www.infomine.com/investment/metal-prices/) show how metals prices have decreased since 2011 (except for palladium).

Table 7. Proposed Pebble Project Metals Price Assumptions

5.0 a 1	15 *4	Long-Term Metal	Prevailing	Current Prevailing
Metal	Unit	Prices (Wardrop 2011 PA)	Metal Prices (Wardrop 2011 PA)	Metal Prices (April 2019)
Copper	\$/lb.	2.50	4.00	2.95
Gold	\$/oz.	1,050	1,350	1,296
Molybdenum	\$/lb.	13.50	15.00	12.46
Silver	\$/oz.	15.00	28.00	15.00
Rhenium	\$/kg	3,000	3,000	2,841
Palladium	\$/oz.	490	490	1,362

\$/kg = US dollar per kilogram

\$/lb. = US dollar per pound

\$/oz. = US dollar per ounce

Cortez et al (2018)² identify and discuss various means of forecasting mineral commodity prices and suggest that traditional approaches that have used econometric, stochastic-Gaussian, and time series techniques are not suitable to represent the "dynamic behavior and time related nature" of metals commodity markets. As noted by the authors, ". . . historical data do not guarantee accurate predictions, as there is no certainty that past events will be repeated in the future at the same intervals and intensity."

Conclusions

Metals prices are a significant risk factor for the proposed Pebble Project. Depending on the timing, particularly during the initial years of project development, lower metals prices could have a significant impact on the economic feasibility of the proposed Pebble Project. This scenario was prevalent following a previous peak in metals prices in the early 1970's that sparked several large projects with unprecedented capital costs, only to see those projects fail when lower metals prices prevailed for a period from project outset over several years resulting in an inability of the mining companies to continue to pay project debt. Examples include Pegasus Gold's Mt Hamilton project in Australia that led to the bankruptcy of the entire company in 1998 and the economic failure, after less than one year, of operations in 1983 of the

² Cortez, C.A.Tapia,S.Saydam, J. Coulton, C.Sammut, Alternative techniques for forecasting mineral commodity prices, International Journal of Mining Science and Technology, Volume 28, Issue 2, March 2018, Pages 309-322. https://www.sciencedirect.com/science/article/pii/S2095268616302634

Copper Flat Project in New Mexico. Given the extremely high capital costs for the proposed Pebble Project combined with uncertainty as to the timing and price of future demand for metals commodities, the proposed Pebble Project carries a high risk of economically failing, particularly in the first 5 to 10 years of the project's life. It should be noted that an initial failure would not preclude the initial operator from undergoing bankruptcy reorganization, or a second operator from taking over the mining operations out of bankruptcy, particularly if the capital debt load was renegotiated with creditors.

Capital and Operating Costs

The issue of capital cost overruns is widely acknowledged in the mining industry and has been the cause of either delays or abandonment of a several projects. Operating cost issues are similarly acknowledged in the mining industry, and these problems are often times difficult to predict, particularly where locations are remote, and conditions are challenging. Even common tasks, such as those proposed for the proposed Pebble Project, associated with mining (open pit) and processing (grinding and flotation) carry inherent risks associated with the estimation of capital and operating costs. For example, Export Development Canada³ reported in 2015 that for mining projects capital costs were typically exceeded by 37 percent. According to a mining industry survey⁴ of projects with capital budgets exceeding US\$1 billion, capital projects on average run 62 percent over budget and 50 percent of these projects reported delays. The survey noted, "despite care planning, overruns and delays were common."

As a case in point, the Pascua-Lama project in Chile was originally expected to cost no more than \$3 billion when construction was approved in 2009. Like the proposed Pebble Project, the Pascua-Lama project faced permitting challenges and strong and organized opposition by local indigenous communities. After investing \$5 billion in the project, the capital cost had escalated to more than \$8.5 billion, and in 2013 Barrick stopped the project.⁵

The Waldrop 2011 PA examined capital and operating cost sensitivity. For the 78-year case, instead of a pre-tax NPV @7% DROR of \$6.8 billion and IRR of 14.5 percent, an increase in

³ Export Development Canada, *Capital Cost Overrun and Operational Performance in Mining Industry* (May 2016) http://www.cimmes.org/wp-content/uploads/2016/05/Capital-Cost-Overrun-and-Operational-Performance-in-Mining-Industry-Tin-Lwin-25May2016.pdf

⁴ EY, Opportunities to enhance capital productivity (May 2015) https://www.ey.com/Publication/vwLUAssets/EY-opportunities-to-enhance-capital-productivity.pdf
⁵ Henry Lazenby, *Barrick to book \$429-million Q4 charge on mired Pascua-Lama*, Mining Weekly, Feb. 7, 2018 https://m.miningweekly.com/article/barrick-to-book-429-million-q4-charge-on-mired-pascua-lama-2018-02-07

capital and operating costs of 20 percent would result in a pre-tax NPV @7% DROR of approximately \$4.0 billion and IRR of 10.0 percent.

The Excel spreadsheet model was used to estimate the impact that a 100-percent increase in capital costs would have on the project. This might result from increases in capital costs similar to those experienced at Pascua-Lama, but also due to a reduction in the portion of capital costs that would be paid for by other parties versus what is assumed in Waldrop 2011 PA. The detailed spreadsheets showing the information used in this model is provided as Attachment 5A-2 (25-Year Mine Resource Case, Sensitivity Case 1).

For the 25-year case, instead of a pre-tax NPV @7% DROR of \$6.8 billion, an IRR of 14.5 percent, and a payback period of 6.2 years, an increase in capital and operating costs of 100 percent would result in a pre-tax NPV @7% DROR of approximately minus \$5 (-\$0.5) billion, an IRR of 6.4 percent, and a payback period of 12 years.

Conclusions

While the Waldrop 2011 PA identified metal price sensitivity as having the greatest impact on project economics, it is clear given the current trend of significant underestimation of capital and operating costs and considering the likelihood that cost overruns would occur, there is a greater risk from capital and operating cost overruns to the proposed Pebble Project than for any other economic risk factor. It should be noted that this aspect of risk has caused many existing projects to be delayed, and alternative approaches, particularly using underground mining, are being evaluated to reduce initial capital costs and access higher-grade ore to address this challenging situation.

Reclamation and Closure Costs

The Wardrop 2011 PA describes the following in terms of reclamation and closure activities:

- A comprehensive closure plan has been prepared to ensure protection of the downstream environment, including re-vegetation of embankment faces and exposed tailings surfaces, incorporating wetlands and ponds on the reclaimed tailings surface, and construction of an overflow system.
- The Site G TSF presented in this Preliminary Assessment will require monitoring to ensure long-term physical and geochemical stability.

- Waste rock dumps will be constructed to a geometry that minimizes closure liability, including siting these facilities within the pit groundwater cone of depression and ensuring suitability for re-vegetation and water management.
- PAG waste rock will be fed through the process plant for metal recovery at the end of mine operations, with attendant tailings discharged into the open pit. Once PAG waste rock has been removed, the base will either be removed for in-pit disposal or covered with soil and revegetated.
- Remaining NAG waste rock piles will be covered with soil and re-vegetated.
- At closure, the tailings storage facility will be reclaimed. During this period, all water will be diverted to the open pit to allow it to fill to a specified level to ensure ongoing groundwater flow into the open pit. Thereafter, water levels will be maintained by treating inflow and discharging it as during operations.

Some additional descriptions of reclamation and closure are provided in Section 18.4.6 Conceptual Mine Reclamation and Closure Plan of the Waldrop 2011 PA.

According to the Section 18.5.11 Mine Closure, "Closure costs are not included in the estimate but are covered in the financial section." According to Section 18.8.2, "For financial evaluation purposes, it is assumed that the Pebble Partnership will provide equal payments over the estimated mine life under each development case and that any shortfall between the accumulated funds within the reclamation trust and the reclamation liability will be made whole with financial assurance in the form of a letter of credit. Funds contributed to the reclamation trust are assumed to earn a real return of 4.3%."

As the actual reclamation costs and accruals were not included in Wardrop 2011 PA, these costs were also not included in the initial Excel spreadsheet model. A preliminary reclamation and closure financial assurance cost estimate, performed by this author, suggests that the total surface reclamation costs would be \$0.6 billion, and the net present value (NPV) of long-term water treatment, monitoring, and maintenance would be \$0.8 billion; therefore, the total estimated reclamation and closure cost would be \$1.4 billion.

Conclusions

It is anticipated that regulatory agencies will require the total financial assurance amount for reclamation and closure to be posted prior to permitting the proposed Pebble Project, or at least prior to the initiation of construction. This financial assurance liability represents additional capital costs and operating costs beyond the costs that appear to have been included in the Excel spreadsheet model. While the financial assurance costs might not have the same level of impact as metals prices or capital and operating costs, the cost of providing financial assurance for reclamation and closure will have a substantial impact on project economics; therefore, these costs pose significant economic risk.

Potential Alternative Development Plans for the Proposed Pebble Project

As noted in the Wardrop 2011 PA, the report was prepared exclusively on behalf of NRML. The report further states:

"Pebble Partnership continues to undertake detailed engineering studies and project planning toward the completion of a Prefeasibility Study for the Pebble Project, and that no decision has been taken by the Pebble Partnership to seek permits for the project as described in this Preliminary Assessment. Recommendations within this Preliminary Assessment will be provided to the Pebble Partnership to guide further technical and engineering studies toward the completion of a Prefeasibility Study for the Pebble Project."

Despite the suggestion that a prefeasibility study would be conducted to guide the proposed plan for permitting, no prefeasibility study has been proffered to the public or regulatory agencies for the current proposed plan of development included in the permit application for the proposed Pebble Project.

Review of the Wardrop 2011 PA and NDML 2018 TR suggests that two alternative scenarios for development exist that are highly likely but have not been evaluated in sufficient detail. The first alternative, which is due to the specifics of the deposit, is for underground mining methods to be used to supplement and/or replace open pit mining at some point in the future – potentially in less than 25 years. The second alternative, which would address the relatively low rate of return for the proposed project is proposed in the Wardrop 2011 PA. This alternative is for production to be increased from the proposed rate of 67M – 86M tons per year (184,000 to 236,000 tons per day) to a substantially higher rate. These two alternatives are further addressed in the following sections.

Underground Mining Alternative

Like the 25-year case in the DEIS, the 25-year Investment Decision Case in the Wardrop 2011 PA was intended to "mine near surface ore for rapid payback" and "This initial phase of mining will process about two billion tons of ore or less than 20% of the total Pebble mineral resource."

The 45-year case was selected as the "Reference Case" for the Wardrop 2011 PA "due to its enhanced level of development of the Pebble mineral resource within a timeframe that makes a significant contribution to the project's Net Present Value (NPV)," and the 78-year case, which would result in mining 55 percent of the total resources, was used to "assess the long-term value of the project."

With respect to future development methods, the Wardrop 2011 PA suggests that "While it's certain that near-surface mineral resources within the western portion of the Pebble deposit will be most efficiently developed through open pit methods, underground mining (in particular, block caving) remains an economically viable option at long-term metal prices for developing the deeper and higher-grade resources in the eastern portion" and "it is expected that additional underground investigations will be undertaken during the initial 25 years of production." The report reflects this possibility and atypically includes both an open pit mining plan for the three scenarios considered and an underground mine plan of equal detail.

Conclusions

It is rare for a mining company to perform a feasibility analysis that does not contemplate exploitation of the entire resource. The Wardrop 2011 PA is constrained to the use of open pit mining methods and may represent the maximum reasonable extent to which the proposed Pebble Project could be developed using open-pit mining methods. Given that this would only result in the development of 55 percent of the total resources with the remaining resources open and accessible at depth, it is logical to assume highly probable that underground mining would take place if the remainder of the resources were to be developed in the future. However, given this likelihood, it is also possible that underground mining could be used earlier to develop part of the proposed open pit mining, which is why detailed information on the underground mining alternative was provided in the Wardrop 2011 PA.

As detailed cost information is not available, it is not possible to do an economic evaluation of underground mining based on the Wardrop 2011 PA. However, underground mining can be significantly less capital intensive, and if higher grade ore can be developed, underground mining can be more profitable than open pit mining. This can be seen at other major proposed projects with similar capital constraints. For example, the KSM Project in British Columbia,

Canada, initially planned to develop an open pit mine. This initial approach may be replaced with an alternative development plan for underground mining to improve initial project economics.⁶ Based on the information available, there is an equally high probability that if the proposed Pebble Project is permitted and ultimately developed, the majority of the resource will be developed using underground mining methods, and underground mining could potentially be part of the initial mining of the resource to reduce capital costs and access higher grade ore early in project development.

Increased Production Rate Alternative

The economics of scale are highly evident in modern mining projects with the throughput of mines prior to the 1960's being limited to several thousand tons of ore per day at a maximum using underground or open mining methods to today's mega-mines which can mine at rates greater than one million tons per day and process greater than 400,000 tons per day. In the U.S., increases in production rates, provided they are not accompanied by increases in impacts such as area of land disturbed, are typically allowed without major modifications to the existing mine permit, which is based on a lower production rate used in the initial proposal and permit application.

The Wardrop 2011 PA evaluations are based on long-term metals prices and indicated an IRR ranging from 13.4 percent for the 25-year case, 14.2 percent for the 45-year case, and 14.5 percent for the 78-year case. It is important to note that an IRR of 13.4 percent is considered a low to moderate return for a metals mining project, and many mining companies set a target of at least 30 percent, and oftentimes 40 percent, for the IRR on a proposed project. This relatively high IRR is set to account for the sensitivity and volatility of metals mining projects as identified previously in this memorandum.

It is also important to note that due to the time value of money, only a slight improvement is realized by extending the project life from 25 years to 45-years to 78-years. Economic analysis shows that the only way to improve the return (IRR) on a fixed asset such as a mineral resource, other than "high-grading" that might occur using underground mining, is for the scale (production rate) of the project to be increased.

The Excel spreadsheet model was used to estimate the impact that a doubling of the project production rate (100-percent increase) would have on the project. Engineering cost estimation

⁶ Seabridge Gold, Featured Projects: KSM, Courageous Lake, Iskut http://seabridgegold.net/projects.php

rule-of-thumb factors of 1.6 times the capital costs and 0.8 times the operating cost for doubling capacity were used to generate the cost estimates and economic forecasts. The detailed spreadsheets showing the information used are provided as Attachment 5A-2 (39-Year Mine Resource Case, Sensitivity Case 2).

Using the 78-year resource at double the production rate results in a 39-year mine plan. The results are summarized in Table 8 For the double production case, instead of a pre-tax NPV @7% DROR of \$6.8 billion, an IRR of 14.5 percent, and a payback period of 6.2 years; a two-fold increase in the production rate would result in a pre-tax NPV @7% DROR of \$21.2 billion, an IRR of 22 percent, and a payback period of 3.2 years.

Table 8. Wardrop 2011 PA 75-Year Case and Double Production (39-Year) Case Long-Term Metals Prices

Description	Units	75-Year Case Wardrop 2011 PA	39-Year Case
NPV @ 0% DROR	\$M	87,329	103,772
NPV @ 5% DROR	\$M	12,941	32,309
NPV @ 7% DROR	\$M	6,812	21,164
NPV @ 8% DROR	\$M	4,964	17,221
NPV @ 10% DROR	\$M	2,545	11,451
IRR	%	14.5	22
Payback	years	6.2	3.2

\$M = millions of US dollars K&A = Kuipers & Associates DROR = discounted rate of return

NPV = net present value

IRR = internal rate of return
PA = Preliminary Assessment

Conclusions

Given the present marginal project economics, it is highly likely that the proposed Pebble Project will need to consider increasing the production rate beyond the rates contemplated in the 2011 Wardrop PA as a means of improving project economics. It would not be unusual for the increased production rate to be proposed after permitting is completed but before construction is initiated.

SUMMARY OF EXPERIENCE

Over 35 years of experience in mining and environmental process engineering design, operations management, regulatory compliance, waste remediation, reclamation and closure, and financial assurance. Over 20 years of experience providing technical assistance to public interest groups and tribal, local, state and federal governments on technical aspects of mining and environmental issues.

EDUCATION

Montana College of Mineral Science and Technology, B.S. Mineral Process Engineering, 1983.

PROFESSIONAL REGISTRATION

Professional Engineer (PE Mining/Minerals): Colorado (No. 30262), Montana (No. 7809 & Corp. No. 197)

PROFESSIONAL EXPERIENCE

1996 to Present Kuipers & Associates/J. Kuipers Engineering, Butte, MT.

- ABN AMRO Bank, Netherlands: Consulting Engineer, confidential mine evaluation.
- Amigos Bravos, Taos, NM: Consulting Engineer, Molycorp Questa Mine, technical review committee and working group member in reclamation and closure/closeout permitting and bonding process.
- Anaconda Deer Lodge County, MT: Consulting Engineer/Project Manager, Anaconda Superfund Site, provide technical services related to institutional controls, property conveyance and redevelopment, property and facility operation and maintenance, review of regulatory documents, renewable energy development, air and water monitoring and other tasks related to county involvement in Superfund activities.
- Bannock Technologies, Pocatello, ID: Consulting Engineer, Shoshone Bannock Tribe mining oversight project studies.
- Blackfoot Legacy, Lincoln, MT: Consulting Engineer, McDonald Project, review of project feasibility and environmental issues.

- Border Ecology Project, Santa Fe, NM: Consulting Engineer, Cananea Project (Mexico), consulting engineer mine reclamation and closure planning.
- Cabinet Resource Group, Noxon, MT: Consulting Engineer, Rock Creek Project, review of proposed tailing impoundment.
- Clark Fork River Technical Advisory Committee, Missoula, MT: Technical Advisor, Clark Fork River and Milltown Reservoir Operable Units, Upper Clark Fork Basin Superfund Sites.
- Center for Science in Public Participation, Bozeman, MT: See separate description below.
- Citizens' Technical Environmental Committee, Butte, MT: Technical Advisor, Butte-Silver Bow Site Operable Units, Upper Clark Fork Basin Superfund Sites.
- Cottonwood Resource Council, Big Timber, MT: Consulting Engineer, Lodestar Mine and Mill, review of operating and MPDES permits, financial assurance and operations data.
- *Earthjustice, Bozeman, MT:* Consulting Engineer, Montanore and Rock Creek Projects permitting process.
- Earthworks, Washington, D.C.: Project Manager and co-author, Water Quality Predictions and NEPA/EIS Studies.
- Environmental Defender Law Center, Bozeman, MT: Expert Witness and Consulting Engineer, Boliden Promel, Chile arsenic waste disposal.
- Gila Resources Information Project, Silver City, NM: Consulting Engineer, Phelps Dodge Chino, Cobre and Tyrone Mines, reclamation and closure/closeout permitting and bonding process.
- Great Basin Mine Watch, Reno, NV: Expert Witness and Consulting Engineer, various NV
 projects, permitting and reclamation and closure/closeout permitting and bonding process.
- Great Lakes Indian Fish and Wildlife Commission, Odinah, WI: Gigotec Project and Polymet Project permitting.
- *ICF International, Stafford, VA*: Consulting Engineer, 108(b) rulemaking technical support contract including financial assurance cost estimation model evaluations.
- *Idaho Conservation League, Boise, ID*: Consulting Engineer, Atlanta Mine water treatment and permitting.
- IEc, Boston, MA: Consulting Engineer, mining and financial assurance technical support.
- Institute for Governance & Sustainable Development, Washington, DC: Consulting Engineer,

- reclamation and closure and financial assurance, U.S. Chile Mining Financial Assurance Seminar.
- *Johnson County, KS*: Consulting Engineer, Sunflower Limestone Mine reclamation plan and financial assurance.
- Little Salmon Carmacks First Nation, Yukon Territory, Canada: Expert Witness and Consulting Engineer, Carmacks Copper Project.
- Mining Watch Canada: Consulting Engineer MEND Tailings Guide Review; Ecuador Mines Evaluations.
- *Minnesota Center for Environmental Advocacy, Saint Paul, MN:* Consulting Engineer, PolyMet NorthMet Project, review permits, reclamation and closure, financial assurance, tailings facilities.
- Montana Attorney Generals Office, Helena, MT: Consulting Engineer, assist in defense of I-137
 Open Pit Cyanide Mine Ban appeals.
- Montana Department of Environmental Quality, Helena, MT: General Contractor, Pony Mill Site Reclamation.
- Montana Environmental Information Center, Helena, MT and National Wildlife Federation,
 Missoula, MT: Expert Witness and Consulting Engineer, Golden Sunlight Mine, EIS Review and assist appeal of State operating permit.
- Montana Environmental Information Center, Helena, MT: Expert Witness, Bull Mountain Coal Mine appeal.
- Montana Trout Unlimited, Missoula, MT: Consulting Engineer, Trout Unlimited's Four Mines
 Campaign, review and provide technical assistance on McDonald, Crandon, New World and
 Rock Creek Mines.
- *Montana Trout Unlimited, Missoula, MT*: Consulting Engineer, I-147 initiative campaign; Black Butte Copper Proposal; Beal Mountain Mine Remediation.
- Multicultural Alliance for a Safe Environment, Santa Fe, NM: Consulting Engineer and Expert Witness, Homestake Uranium Mill and Mt Taylor Mine.
- Natural Resources Defense Council; New York State: Consulting Engineer, review of Oil & Gas Draft EIS.
- New Mexico Environmental Law Center, Santa Fe, NM: Consulting Engineer, Oglebay Norton

- Mica Mine reclamation and financial assurance; New Mexico Environment Department Copper Rules Stakeholder Process.
- Nez Perce Tribe Fisheries Department, McCall, ID: Consulting Engineer, Midas Gold Stibnite Project permitting.
- Northern Plains Resource Council, Cottonwood Resource Council, Stillwater Protective
 Association, Billings. MT: Consulting Engineer, Stillwater Mining Company Nye and East
 Boulder Mines, facilitate and perform technical aspects of Good Neighbor Agreement.
- Northern Plains Resouce Council, Billings, MT; Wyoming Outdoor Council, Sheridan, WY:
 Consulting Engineer, Montana Statewide and Wyoming Powder River Basin Coal Bed
 Methane FIS.
- Northern Plains Resouce Council, Billings, MT: Project Manager and co-author, Coal Bed Methane Produced Water Studies.
- Northern Alaska Environmental Council, Fairbanks, AK: Consulting Engineer, Pogo Mine NPDES permit negotiations.
- Patagonia Area Resource Alliance, Patagonia, AZ: Consulting Engineer, Arizona Mining, Remediation Plans
- *Picuris Pueblo, Penasco, NM*: US Hill Mica Mine Reclamation Plan and financial assurance cost estimate and site reclamation project management.
- Powder River Basin Resource Council, Sheridan, WY/Steven Adami, Buffalo, WY: Expert Witness, Kennedy Oil IMADA POD appeals.
- Rock Creek Alliance, Missoula, MT: Expert Witness and Consulting Engineer, Rock Creek and Montanore Mines permitting.
- Selkirk First Nation, Yukon Territory, Canada: Expert Witness and Consulting Engineer, Minto Mine Project reclamation and closure and financial assurance; Casino Mine Proposal permit review.
- Sheep Mountain Alliance, Telluride, CO: Expert Witness and Consulting Engineer, Silver Bell Tailings remediation.
- Shoshone-Paiute Tribes of the Duck Valley Reservation, NV: Consulting Engineer, Rio Tinto Mine Reclamation and Closure.
- Sierra Club and Mineral Policy Center: Expert Witness, Cripple Creek and Victor Mining

Company Clean Water Act case.

- *SKEO, Charlottesville, VA*: Consulting Engineer, mining and financial assurance technical support contract and EPA Region NEPA review and financial assurance support.
- Southern Environmental Law Center, Charleston, SC: Consulting Engineer, Haile Gold Mine permitting.
- Systems Research and Applications Corporation, Fairfax, VA: Consulting Engineer, mine cleanup and financial assurance guidelines subcontract to EPA.
- Tohono O'odham Nation, San Xavier District, AZ: Consulting Engineer, Mission Mine reclamation plan and financial assurance.
- Trust for Public Lands, San Francisco, CA: Consulting Engineer, Viceroy Castle Mountain Mine, evaluated pit backfill and reclamation alternatives for settlement agreement trust fund determination.
- Tsilhqot'in National Government, Williams Lake, BC, Canada: Consulting Engineer and Expert Witness, New Prosperity Project permitting.
- Turner Ranch Properties, Ladder Ranch, NM: Consulting Engineer Copper Flat Project Permitting, Expert Witness related water rights case.
- Walz and Associates, Albuquerque, NM: Expert Witness and Consulting Engineer, assist in defense of New Mexico Environment Department and Mining and Minerals Division permitting and takings case (Manning v. NM).
- Western Organization of Resource Councils, Billings, MT: Oil and gas reclamation and financial assurance guide.
- Western Resource Advocates, Salt Lake City, UT: Expert Witness and Consulting Engineer, Red Leaf Resources oil shale project permitting.
- Williams Lake and Soda Creek Indian Bands, British Columbia, Canada: Consulting Engineer, Mount Polley Tailings Facility breach investigations and mine reopening permitting.

1997 to 2005 Center for Science in Public Participation, Bozeman, MT.

• Canadian Earthcare Society, Vancouver, BC: Consulting Engineer, Brenda Mine, assist appeal of reclamation and closure permit.

- CEE Bankwatch, Budapest, Hungary: Consulting Engineer, Rosario Montana Mine (Romania), economic feasibility study of mine proposal.
- Friends of the Similkameen, Hedley, BC: Consulting Engineer, Candorado Mine, assist appeal of reclamation and closure permit.
- Fort Belknap Tribal Council and Environment Department, Fort Belknap, MT: Consulting Engineer, Zortman and Landusky Mines, Alternative Reclamation and Closure Plan, multiple accounts analysis working group member and technical advisor during supplemental environmental impact statement.
- Guardians of the Rural Environment, Yarnell, AZ: Consulting Engineer, Yarnell Project, EIS review and assist appeal of State operating permit.
- *Mineral Policy Center, Washington, D.C.*: Technical Advisor on general mining issues and Author of MPC Issue Paper.
- National Wildlife Federation, Boulder, CO: Consulting Engineer authoring report on Hardrock Mining Reclamation and Closure Bonding Practices in the Western United States.
- Sakoagan Chippewa Tribes, Mole Lake Reservation, Wisconsin. Consulting Engineer, Crandon Project, permitting process review.

1993 - 1995 **Denver Mineral Engineers, Inc., Littleton, CO.**

- Manager, Process Engineering Department.
- Manager, Mining and Environmental Wastewater Treatment Program
- Arrowhead Industrial Water Co., San Jose, CA: Project Manager, evaluation of reverse osmosis for mine wastewater treatment.
- Barrick Goldstrike, USA, Elko, NV: Project Engineer, engineering design, construction and installation of 1.5 M oz/year stainless steel electrowinning system.
- Battle Mountain Gold, Co., Battle Mountain, NV: Project Manager, evaluation, pilot testing, and preliminary feasibility study of wastewater treatment options for groundwater remediation of Fortitude Mine tailings area.
- Commerce Group Corporation, Milwaukee, WI: Project Manager, San Sebastian Gold Project, El Salvador.

- Independence Mining Corp, Jerritt Canyon, NV: Project Manager, technical evaluation and feasibility study of column flotation for beneficiation of refractory ores.
- *Kennecott Utah Copper, Bingham Canyon, UT*: Project Manager, design and construct stainless steel solvent extraction mixer settlers for prototype SX/EW plant.
- *Israeli Chemical Corp., Beersheeba, Israel*: Project Manager, evaluation of bromine as an alternative to cyanide gold leaching and prototype design.
- Marston and Marston, St Louis, MO: Project Manager, Kommunar Gold Mill Modernization Project, Kommunar, Siberia, Russia (CIS) and Suzak Polymetal Leach Circuit Evaluation and Feasibility Study, Kazakhstan (CIS).
- Nevada Goldfields Mining Co., Denver, CO: Project Manager, Nixon Fork Mine Preliminary
 Engineering Design and Feasibility Study, Concentrate Marketing Study, and environmental
 permitting studies.
- Southern Pacific Railroad, Denver, CO: Project Manager, design, construction and installation of dissolved air flotation wastewater treatment system.

1991 - 1992 Western States Minerals Corp.

- Project Manager, Northumberland Gold Mine, Round Mountain, NV.
- Corporate Senior Metallurgist, Wheat Ridge, CO. Engineering design and feasibility evaluations.

1986 - 1991 Western Gold Exploration and Mining Co. (WESTGOLD)/Minorco

- Corporate Senior Metallurgist / Project Manager, WESTGOLD, Golden, CO. Acquisitions and engineering design and feasibility evaluations, corporate acquisitions and business development group.
- Project Manager, Shamrock Resources (WESTGOLD Subs.), Reno, NV. Evaluation, engineering design and feasibility study, and prototype plant operation of refractory gold ore bioleaching technology program.
- Project Manager, Balmerton Mine, Ontario: Refractory gold ore bioleaching project and feasibility evaluation.

- Project Engineer, Johannesburg South Africa: Evaluation of Anglo American Corp. Pumpcell Technology.
- Mill Superintendent, Austin Gold Venture (WESTGOLD), Austin, NV.
- Shift Foreman, Inspiration Consolidated Copper Co, Globe, AZ.

1984 - 1985 Canyonlands 21st Century Corporation

• Director of Metallurgy, Blanding, UT. Project Manager, Jarbidge, NV.

1983 - 1984 **Cumberland Mining Corporation**

• Mill Superintendent / Head Metallurgist, Basin and Virginia City, MT.

1974 – 1980 **Huckaba Construction**

 Summer employment as Underground and Surface Miner, Millwright, Mill Operator, Fire Assayer, Whitehall and Cooke City, MT. Family owned small mining operation.

PRESENTATIONS and PUBLICATIONS

- Hardrock Mine Financial Assurance Training Workshop, National Tribal Mining Workgroup, McCall, ID, October 11-12, 2017.
- The Development of Remedial Design Options for the Questa Mine Waste Rock Piles using a Collaborative Approach, Kuipers, J. et al, Tailings and Mine Waste 2017, Nov 5-8, Banff, Alberta, Canada
- Mine Reclamation and Closure Planning: Reducing the Risk from Mining Influenced Water, Mine Financial Assurance: Addressing the Cost of Mining Influenced Water, U.S. EPA The Mining Lifecycle: Tribal Engagement and Responsibility Conference, Phoenix, AZ, November 2-4, 2016.
- Mine Tailings Fundamentals: Current Technology and Practice for Mine Tailings Facilities
 Operations and Closure, U.S. EPA Contaminated Site Clean-Up Information Webinar Series
 May 19-20, 2015

- North American Indigenous Peoples Perspectives on the Reliability of Mine Water Technology,
 International Mine Water Association, Golden, CO, 2013 Annual Conference.
- Financial Assurance Regulations and Cost Estimation at US Hardrock Mines, U.S. Chile Mining Financial Assurance Seminar, US Office of Surface Mining and Environmental Protection agency and Chilean Ministry of Mining, Santiago, Chile, May 2012.
- Mining Reclamation and Closure Regulations and Best Practices, 2012 International Conference on Mining in Mindanao, Ateneo de Davao University, Davao City, Philippines, January 26-27, 2012.
- Beyond the Global Acid Rock Drainage Guide, Lake Superior Binational Program, Mining in the Lake Superior Basin Webinar Series, Environmental Impacts of Mining in the Lake Superior Basin, October 27, 2009
- Characterizing, Predicting, and Modeling Water at Mine Sites, California Environmental Protection Agency, California Water Board Training Academy, May 18 - 21, 2009 Mitigating Mining Impacts: Principles and Practices, Lake Superior Binational Program, Mining in the Lake Superior Basin Webinar Series, Environmental Impacts of Mining in the Lake Superior Basin, March 24, 2009
- Long-term Requirements & Financial Assurance at Superfund & Other Mine Sites, Mine Design, Operations and Closure Conference, Fairmont Hot Springs, MT, April 2008.
- The Effects of Coalbed Methane Production on Surface and Ground Water Resources,
 Committee on Earth Resources, Board on Earth Sciences and Resources, National Research
 Council, Meeting on the Status of Data and Management Regarding the Effects of Coalbed
 Methane Production on Surface and Ground Water Resources, Denver, Colorado, April 2008.
- Reclamation Planning and Financial Assurance Practice in the United States, Kamchatka
 Mining Conference, Kamchatka Oblast People's Council of Deputies, the Committee on
 Ecology and Resource Management of Kamchatsky Krai, the Rosprirodnadzor Division of
 Kamchatka Oblast and Koryaksky Autonomous Okrug, the Division for Minerals
 Management for Kamchatka Krai, and the Kamchatka Oblast Council of the All-Russia
 Society for Nature Protection, Petropavlovsk-Kamchatsky, Russia, October 2007.
- The Good Neighbour Agreement: A Proactive Approach to Water Management through Community Enforcement of Site-Specific Standards, w Sarah Zuzulock, Greener Management International, Issue 53, Spring 2006, Greenleaf Publishing. 2007.

- Sustainable Development at the Anaconda Superfund Site, Mine Design, Operations and Closure Conference, Fairmont Hot Springs, MT, April 2007.
- Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in Environmental Impact Statements with A. Maest, K. MacHardy, G. Lawson. Predicting Water Quality at Hardrock Mines: Methods and Models, Uncertainties, and State-of-the-Art with A. Maest, Final Report Release December 2006.
- Reclamation and Bonding in Copper Mining, U.S. EPA Hardrock 2006: Sustainable Modern Mining Applications, Tucson, Arizona, November 2006.
- Sustainable Development at the Anaconda Superfund Site: U.S. EPA Hardrock 2006: Sustainable Modern Mining Applications, Tucson, Arizona9, November 2006.
- U.S. Perspective on Financial Assurance for Mine Cleanup, presented at International Bar Association Conference, Chicago, Illinois, September 2006.
- Comparison of Predicted and Actual Water Quality at Hardrock Mines: The reliability of predictions in Environmental Impact Statements with A. Maest, K. MacHardy, G. Lawson, presented at Mine Design, Operations and Closure Conference, Fairmont Hot Springs, MT, April 2006.
- Predicted Versus Actual Water Quality at Hardrock Mine Sites: Effect of Inherent Geochemical and Hydrological Characteristics with A. Maest, K. MacHardy, and G. Lawson at International Congress on Acid Rock Drainage (ICARD), March 2006, St. Louis, MS.
- Oil, Gas and Coal Bed Methane Reclamation and Financial Assurance Guide, with Kimberley MacHardy and Victoria Lynne, November 2005; 12th International Petroleum Environmental Conference, Houston, TX.
- Approaches to Abandoned Mine Site Assessment and Remedy Selection in the U.S., NOAMI
 Workshop on Assessing Liabilities and Funding Options, November 2, 2005 Ottawa, Canada
- Filling the Gaps: How to Improve Oil and Gas Reclamation and Reduce Taxpayer Liability, Kuipers & Associates for Western Organization of Resource Councils, August 2005.
- The Environmental Legacy of Mining in New Mexico, Mining in New Mexico: The Environment, Water, Economics and Sustainable Development, New Mexico Bureau of Geology and Mineral Resources, Decision-Makers Field Conference 2005, L. Greer Price et al Editors.

- Financial Assurance and Bonding, 2005 Decision-Makers Field Conference, Mining in New Mexico: The Environment, Water, Economics and Sustainable Development, New Mexico Bureau of Geology and Mineral Resources, May 2005.
- Evaluation of the NEPA Process for Estimating Water Quality Impacts at Hardrock Mine Sites with A. Maest, K. MacHardy, G. Lawson, for Earthworks, presented at Society of Mining Engineers Annual Conference, Salt Lake City, UT, March 2005 and Mine Design, Operations and Closure Conference, Polson, MT, April 2005.
- Evaluation of Methods and Models Used to Predict Water Quality at Hardrock Mine Sites:
 Sources of uncertainty and recommendations for improvement with A. Maest, C. Travers and D. Atkins, for Earthworks, presented at Society of Mining Engineers Annual Conference, Salt Lake City, UT, March 2005 and Mine Design, Operations and Closure Conference, Polson, MT, April 2005.
- Coal Bed Methane-Produced Water: Management Options for Sustainable Development, coauthored with K. MacHardy, W. Merschat and T. Myers, presented at Coal Bed Natural Gas Research, Monitoring and Applications Conference, Laramie, WY, August 2004; 11th International Petroleum Environmental Conference, Albuquerque, NM, October 2004; Northern Plains Resource Council Annual Meeting, November 2004.
- Technology-Based Effluent Limitations for Coal Bed Methane-Produced Wastewater Discharges in the
 - Powder River Basin of Montana and Wyoming, Northern Plains Resource Council, Billings, MT, November 2004.
- Financial Assurance Guidelines for Hardrock Mine Cleanup, Mine Design, Operations and Closure Conference, Polson, MT, April 2004.
- *Introduction to Mine Water Treatment*, Mine Discharge Water Treatment Short Course, Mine Design, Operations and Closure Conference, Polson, MT, April 2004.
- Coal Bed Methane: A Design and Process Overview of Production and Produced Water, presented as short course at Joint Engineers Conference, Helena, MT, November 2003.
- The Good Neighbor Agreement between Stillwater Mining Company and Northern Plains Resource Councils: An Example of Industry and Citizen Cooperation, presented as a short course at Joint Engineers Conference, Helena, MT, November 2003.

- Reclamation and Financial Assurance for Mines on or Impacting Tribal Land, presented at U.S.
 EPA Workshop on Mining Impacted Native American Lands, Reno, NV, September 2003.
- Reclamation and Financial Assurance from a Public Interest Perspective, presented at U.S.
 Forest Service National Geofest, Park City, UT, September 2003.
- U.S. State and Federal Policies on Financial Assurance Forms for Hardrock Mines, presented at New Mexico Financial Assurance Forum, Santa Fe, NM, May 2003.
- Public Interest Perspective on Land Application Disposal, presented at Mine Design, Operations and Closure Conference, Polson, MT, April 2003.
- Putting a Price on Pollution: Financial Assurance for Mine Reclamation and Closure, Mineral Policy Center, Washington, D.C., March 2003.
- Testimony to the Subcommittee on Energy and Mineral Resources, Committee on Resources,
 U.S. House of Representatives, Hearing on "Availability of Bonds to Meet Federal
 Requirements for Mining, Oil and Gas Projects." Washington, D.C., July 23, 2002.
- Mine Closure and Financial Assurance: Can the Mining Industry Afford It's Legacy?, presented at Global Mining Initiative Conference, Toronto, Canada, May 2002.
- The Role of the Center for Science in Public Participation in Mining Environmental Issues, with Perspective for Regulators and Industry, presented at Canadian Institute of Mining and Metallurgical Engineers Conference, Vancouver, Canada, May 2002 and U.S. EPA Hardrock Mining Conference, Denver, Colorado, May 2002.
- The Good Neighbor Agreement between Stillwater Mining Company and the Northern Plains Resource Councils: The Formation and Implementation of a New Approach to Addressing Environmental and Community Relations Issues, presented at U.S. EPA Hardrock Mining Conference, Denver, Colorado, May 2002.
- Underground Hard-Rock Mining: Subsidence and Hydrologic Environmental Impacts, Center for Science in Public Participation, Bozeman, MT, February 2002. Co-authored with S. Blodgett.
- Review of the Multiple Accounts Analysis Alternatives Evaluation Process Completed for the Reclamation of the Zortman and Landusky Mine Sites; presented at National Association of Abandoned Mine Lands Annual Conference, Athens, Ohio, August 2001. Co-authored with S.C.Shaw, A.M. Robertson, W.C. Maehl and S. Haight.

- Full Reclamation and Closure Plan, Phelps Dodge Tyrone Mine, Grant County, NM; Gila Resources Information Project, Silver City, NM, July 2001. Co-authored with S. Blodgett.
- Reclamation Bonding for Hardrock Metal Mines Workshop; presented by CSP2 at Juneau and Fairbanks, AK, July 2001.
- Full Reclamation and Closure Plan, Phelps Dodge Chino Mine, Grant County, NM; Gila
 Resources Information Project, Silver City, NM, June 2001. Co-authored with S. Blodgett.
- Reclamation Bonding in Montana; Montana Environmental Information Center, Helena, MT, November 2000. Co-authored with S. Levit.
- Full Reclamation and Closure Plan, Molycorp Questa Mine, NM; Amigos Bravos, Taos, NM, May 2000.
- Hardrock Mining Reclamation and Bonding Practices in the Western United States: National Wildlife Federation, Boulder, CO, February 2000.
- An Economic Evaluation of the McDonald Gold Project; Blackfoot Legacy, Lincoln, MT, February 2000.
- Restoring the Upper Clark Fork: Guidelines for Action; Trout Unlimited, Missoula, MT, April 1999. Co-authored with D. Workman, B. Farling and P. Callahan.
- Alternative Final Reclamation and Closure Plan, Zortman and Landusky Mines, MT: Indian Law Resource Center, Helena, MT, January 1999.
- Reclamation Bonding Regulations of Precious Metal Heap Leach Facilities in the Western
 United States: Presented at the workshop on Closure, Remediation and Management of
 Precious Metals Heap Leach Facilities, University of Nevada, Reno, Jan 15, 1999.
- Wastewater Treatment Methods for Base and Precious Metal Mines: Public Education for Water Quality Project, Northern Plains Resource Council, Billings, MT, 1996.
- Bacterial Leaching Pilot Study Oxidation of a Refractory Gold Bearing High Arsenic Sulphide Concentrate: Randol Gold Forum, Squaw Valley, 1990. Co-authored with J. Chapman, B. Marchant, R. Lawrence, R. Knopp.
- Novel Aspects of Gold Recovery Using Column Flotation at Austin Gold Venture: Gold and Silver Recovery Innovations, Phase IV Workshop, Randol International Ltd, Sacramento, CA, 1989.

Attachment 5A-2. Table of Contents

Item	Description
5A-2a	78-Year Mine Resource Case
5A-2b	45-Year Mine Resource Case
5A-2c	25-Year Mine Resource Case
5A-2d	25-Year Mine Resource Case, Sensitivity Case 1
5A-2e	39-Year Mine Resource Case, Sensitivity Case 2

Abbreviat	ions and Acronyms
%	percent
\$	US dollars
\$/lb	US dollars per pound
\$/oz	US dollars per ounce
\$/kg	US dollars per kilogram
\$M	US dollars in millions
Ag	silver
Au	gold
Cu	copper
DROR	Discounted rate of return
IRR	Internal rate of return
K	thousands
kg	kilogram
Kkg	thousands of kilograms
koz.	thousands of ounces
lb.	pounds
М	millions
Мо	molybdenum
Mlb.	millions of pounds
NPV	Net present value
OZ.	ounce
oz./t	ounces per metric ton
Pd	palladium
ppm	parts per million
Rh	Rhodium
t	metric ton

Proposed Pebble Project DEIS
Technical Review of Economic Feasibility
Table of Contents
Technical Memorandum No. 5, Attachment 5A-2
Page 1 of 1

Pebble Mine Pro Forma 2011 Preliminary Assessment 78-Year Mine Resource Case

													000000000000000000000000000000000000000								*************																
Description	Units		alculated _		- 1 -															ear										- 1							
•		Actual	Total	-4 -	3 -2	-1	1 1	2	3	4	5 6	7	8	9	10	11	12	13 14	15	16	17	18	19	20	21	22	23 .	24 2	5	26	27	28	29	30	31 3	32 .	33
Production		,					,																														
Mining																																					
Ore	t		6,526				67			67		73 73		73			86		86 86	86		86	86	86	86	86	86	86	86	89	89	89	89	89	89	89	89
Waste	t		17,247				67			67		_	5 95						41 241			241	241		241		241		241	177	177				177	177	177
Strip Ratio (Waste/Ore)			2.6				1.0	1.0	1.0	1.0	1.0	1.3 1.3	3 1.3	1.3	1.3	2.8	2.8	2.8	2.8 2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Processing																																					
Ore Milled	t	6,528	6,526				67			67		73 73		73					86 86	86		86	86		86		86	86	86	89	89				89	89	89
Cu Grade	%	0.47					0.36	0.36	0.36	0.36	0.36 0.	.34 0.34	4 0.34	0.34	0.34	0.38	0.38	0.38 0	.38 0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
Au Grade	oz./t	0.0108					0.0112	0.0112	0.0112	0.0112	0.0112 0.01	0.010	7 0.0107	0.0107	0.0107	0.0118	0.0118	0.0118 0.01	18 0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118 0	.0118 0.	0118	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011
Mo Grade	ppm	243					171.1	171.1	171.1	171.1	171.1 158	8.8 158.8	8 158.8	158.8	158.8	183.5	183.5	183.5 18	3.5 183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	242.3	242.3	242.3	242.3	242.3	242.3	242.3	242.3
Cu Recovery	%	88					82	82	82	82	82	86 86	6 86	86	86	87	87	87	87 87	87	87	87	87	87	87	87	87	87	87	89	89	89	89	89	89	89	89
Au Recovery	%	71					70	70	70	70	70	70 70	0 70	70	70	72	72	72	72 72	72	72	72	72	72	72	72	72	72	72	71	71	71	71	71	71	71	71
Mo Recovery	%	89					79	79	79	79	79	82 82	2 82	82	82	85	85	85	85 85	85	85	85	85	85	85	85	85	85	85	90	90	90	90	90	90	90	90
Concentrate Production													1																								
Cu Au Concentrate													1																								
Cu Pounds	Mlb.	53,437	53,346				393	393	393	393	393 4	27 427	7 427	427	427	569	569	569 5	69 569	569	569	569	569	569	569	569	569	569	569	867	867	867	867	867	867	867	867
Au Ounces	koz.	50,133	49,810				522	522	522	522	522 5	47 547	7 547	547	547	731	731	731 7	31 731	731	731	731	731	731	731	731	731	731	731	692	692	692	692	692	692	692	692
Ag Ounces	koz.	241,719					3,099			3,099	3,099 3.0	99 3,099	9 3,099	3,099	3,099	3,099	3,099	3,099 3,0	99 3,099	3.099	3,099	3,099	3.099	3,099	3,099	3,099	3.099	3,099 3	3,099	3,099	3,099		3,099	3,099			3,099
Rh Kilograms	Kkg	2,312				+	30	30		30		30 30	-+	30			30		30 30	30		30	30		30	30	30	30	30	30	30		30	30	30	30	30
Pd Ounces	Koz.	1,589				+	20			20		20 20		20		20			20 20	20		20	20	20	20	20	20	20	20	20	20		20	20	20	20	20
Mo Concentrate	1102.	1,505					+						+																								
Mo Pounds	Mlb.	2.835	2,800				18	18	18	1.8	18	19 10	9 10	19	19	27	27	27	27 27	27	27	27	27	27	27	27	27	27	27	39	39	30	39	30	39	39	39
	WID.	2,033	2,000			<u> </u>	1 101	101	101	101	10]	12] 1.	21 12	1 12	1.2			27]	21 21	21	21	21	2/	211	211			21	21	39	33	39	33	33	331	331	391
Revenue Motal Prices	- - - - - - - - - - 		T	T	T	Т	 	-			T		T	1	T	<u>-</u>	T	T		r					·····		T	<u></u>				T		T			
Metal Prices	\$ 111.	3.50					3.50	3.50	3.50	2.50	2.50	50 35	0 350	3.50	3.50	3.50	250	2.50	FO 350	3.50	3.50	3.50	3.50	3.50	3.50	3.50	2.50	3.50	250	250	3.50	3.50	3.50	3.50	3.50	2.50	3.50
Cu	\$/lb.	2.50				+	2.50			2.50		.50 2.50							.50 2.50			2.50	2.50		2.50				2.50	2.50	2.50						2.50
Au	\$/oz.	1,050.00					1,050.00				,050.00 1,050.		0 1,050.00	1,050.00					.00 1,050.00	1,050.00			1,050.00		1,050.00						1,050.00						050.00 1,0
Mo	\$/lb.	13.50			-		13.50			13.50	13.50 13.								.50 13.50	13.50		13.50	13.50		13.50	13.50			13.50	13.50	13.50		13.50	13.50			13.50
Ag	\$/oz.	15.00					15.00		-	15.00	15.00 15.								.00 15.00	-		15.00	15.00		15.00				15.00	15.00	15.00		-			$\overline{}$	15.00
Rh	\$/kg.	3,000.00					3,000.00		3,000.00		,000.00 3,000.		3,000.00	4			3,000.00 3		.00 3,000.00		3,000.00					3,000.00 3							3,000.00		,000.00 3,0		
Pd	\$/oz.	490.00					490.00	490.00	490.00	490.00	490.00 490.	.00 490.00	0 490.00	490.00	490.00	490.00	490.00	490.00 490	.00 490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00 4	90.00 49	90.00	490.00	490.00	490.00	490.00	490.00	490.00 4	90.00 4	490.00
Gross Revenue																																					
Cu	\$M		133,366				983	983	983	983	983 1,0	67 1,067	7 1,067	1,067	1,067	1,423	1,423	1,423 1,4	23 1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	2,168	2,168	2,168	2,168	2,168	2,168	2,168	2,168
Au	\$M		52,301				548	548	548	548	548 5	74 574	4 574	574	574	768	768	768 7	68 768	768	768	768	768	768	768	768	768	768	768	727	727	727	727	727	727	727	727
Mo	\$M		37,797				243	243	243	243	243 2	57 257	7 257	257	257	362	362	362 3	62 362	362	362	362	362	362	362	362	362	362	362	522	522	522	522	522	522	522	522
Aq	\$M						42	42	42	42	42	42 42	2 42	42	42	42		42	42 42	42			42		42	42	42	42	42	42	42	42	42	42	42	42	42
Rh	\$M						80	80	80	80		80 80		80		80			80 80	80		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
Pd	\$M						9	9	9	9	9	9 0	9 0	q	9	q	9	9	9 9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Total Gross Revenue	\$M	233,908	233,670			-	1.905	1,905	1 905	1,905	1,905 2,0	29 2,029	9 2,029	2,029	2,029	2,684	2,684	2,684 2,6	84 2,684	2,684	2,684	2,684	2,684	2,684	2,684	2,684	2,684	2,684 2	2,684	3,548	3,548	3,548	3,548	3,548	3,548	3,548	3,548
Realization Charges	\$M	-19.938	-19,937				-145			-145		56 -156							11 -211	-211		-211	-211		-211	-211			-211	-311	-311			-311		-311	-311
Net Smelter Revenue	\$M	213,970	213,733				1,760			1,760		73 1,873							73 2,473				2,473		2,473					3,236							3,236
	\$101	210,570	213,733				1,7601	1,760]	1,760]	1,760	1,760 1,0	1,0/3	3 1,073	1,0/3	1,073	2,473	2,473	2,413 2,4	1/3 2,4/3	2,473	2,413	2,413	2,413	2,473	2,473	2,473	2,413	2,413 4	2,473	3,2301	3,230	3,230	3,236	3,436	3,430	3,2301	3,230
Operating Costs	SM I	65.06.3	25,052			T 200	-668	ccol	ccol	-668	ccol		700	700	700	-1.005	4 00 ET	1.00FJ 1.0	005 -1.005	-1.005	1.005	-1.005	1.005	1.005	-1,005	4 00FT	-1.005	1.005 -1	1.005	4.400	4.400	4 4 0 0 1	-1.180		-1.180 -	1 100	# # # # # # # # # # # # # # # # # # #
Operating Cost	2MI	-96,063	-96,063			-269						23 -723											-1,005								-1,180						-1,180
Operating Profit		117,906	117,670			-269	1092	1092	1092	1092	1092 11	50 1150	0 1150	1150	1150	1468	1468	1468 14	1468	1468	1468	1468	1468	1468	1468	1468	1468	1468	1468	2056	2056	2056	2056	2056	2056	2056	2056
Royalties and Local Production Taxes																																					
Tech 4% Pre-Payback, 5% Post-p\Payback	ick		-5,842				-44		-	-44		57 -57	+	-57			-73		73 -73	-73		-73	-73	-73	-73	-73	-73	-73	-73	-103	-103		-103	-103	-103	-103	-103
Local Production Taxes (5%)			-6,718	-59	-59 -59							63 -63							-8484			-84	-84		-84		-84	-84	-84	-148	-108				-108	-108	-108
Gross Profit				-59	-59 -59	9 -328	991	991	991	991	991 1,0	30 1,030	0 1,030	1,030	1,030	1,310	1,310	1,310 1,3	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,310	1,805	1,845	1,845	1,845	1,845	1,845	1,845	1,845
Costs																					<u> </u>																
Capital Costs																																					
Mining	\$M	424				8 -108	1																														
Process		-431		-108	-108 -108	c -100																															
Molybdenum Saration	\$M	-1,058			-108 -108 -265 -26																					- 1											
	\$M \$M					5 -265	;																								,						
Secondary Gold Plant		-1,058		-265	-265 -26	5 -265 1 -21	5																												1		
	\$M \$M	-1,058 -84 -161		-265 21 40	-265 -26 -21 -2 -40 -4	5 -265 1 -21 0 -40	5 1																														
Secondary Gold Plant Infrastructure Tailings	\$M	-1,058 -84		-265 -21	-265 -26 -21 -2 -40 -4	5 -265 1 -21 0 -40 6 -106	5																														
Infrastructure Tailings	\$M \$M \$M	-1,058 -84 -161 -422		-265 -21 -40 -106 -74	-265 -269 -21 -21 -40 -49 -106 -109	5 -265 1 -21 0 -40 6 -106 4 -74	5																														
Infrastructure	\$M \$M \$M \$M \$M	-1,058 -84 -161 -422 -294 -98		-265 -21 -40 -106 -74 -24	-265 -26' -21 -2' -40 -40 -106 -100 -74 -74 -24 -24	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24	5 0 5 1																														
Infrastructure Tailings Pipelines	\$M \$M \$M \$M	-1,058 -84 -161 -422		-265 -21 -40 -106 -74	-265 -26 -21 -2 -40 -4 -106 -10 -74 -7	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24 1 -41	5 0 5 1																														
Infrastructure Tailings Pipelines Access Road Port infrastructure	\$M \$M \$M \$M \$M \$M \$M	-1,058 -84 -161 -422 -294 -98 -162 -155		-265 -21 -40 -106 -74 -24 -41 -39	-265 -261 -21 -2 -40 -40 -106 -100 -74 -7, -24 -2, -41 -4 -39 -3;	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24 1 -41 9 -39	5 1 2 5 4 4																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process	\$M \$M \$M \$M \$M \$M \$M \$M \$M	-1,058 -84 -161 -422 -294 -98 -162 -155 -87		-265 -21 -40 -106 -74 -24 -41 -39 -22	-265 -26: -21 -2 -40 -4i -106 -100 -74 -7, -24 -2, -41 -4 -39 -3: -22 -2;	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24 1 -41 9 -39 2 -22	5																														
Infrastructure Tallings Pipelines Access Road Port infrastructure Port process Power generation	\$M \$M \$M \$M \$M \$M \$M \$M \$M	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534		-265 -21 -40 -106 -74 -24 -41 -39 -22 -134	-265 -266 -21 -2 -40 -44 -106 -100 -74 -7 -24 -24 -39 -3 -22 -2 -134 -13	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24 1 -41 9 -39 2 -22 4 -134	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407		-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352	-265 -261 -21 -2 -40 -44 -106 -100 -74 -74 -24 -24 -41 -41 -39 -30 -22 -2. -134 -134 -352 -352	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24 1 -41 9 -39 2 -22 4 -134 2 -352	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866		-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216	-265 -261 -21 -2 -40 -44 -106 -100 -107 -74 -7. -24 -2. -41 -4 -39 -3: -22 -2. -134 -13. -352 -35. -216 -216	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24 1 -41 9 -39 2 -22 4 -134 2 -352 6 -216	5 4 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757		-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439	-265 -261 -21 -2 -40 -44 -106 -100 -74 -7. -24 -2. -41 -4 -39 -3: -22 -2. -134 -135 -216 -211 1,439 -1,433	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24 1 -41 1 -41 9 -39 9 -39 2 -22 4 -134 2 -352 6 -216 9 -1,439	5 4 4 4 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374		-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -134 -13 -352 -35 -216 -211 -439 -94 -94 -9-9	5 -265 1 -21 0 -40 6 -106 4 -74 4 -24 1 -41 9 -39 2 -22 4 -134 2 -352 2 -352 6 -216 9 -1,439 4 -94	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121		-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30	-265 -261 -262 -263 -264 -40 -444 -706 -100 -744 -7244 -224 -22134 -133 -352 -35216 -216 -214 -39 -3352 -35216 -214 -333 -353 -333 -333 -333 -333 -333 -33	5 -2655 1 -2110 0 -4000 6 -10666 -10666 -10667 1 -4111 1 -4111 1 -4111 2 -222 -222 2 -222 4 -13439 9 -1,4399 9 -1,4399 9 -1,4399 9 -1,4399 0 -300 0	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Mollybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315		-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -67 -534 -1,407 -866 -5,757 -3,74 -121 -1,315 -4,695	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Mollybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Copen Pit Processing	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -1,315 -4,695	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -67 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -7,225 -517 -165	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Mollybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Copen Pit Processing	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -1,315 -4,695	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -67 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -7,225 -517 -165	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -3,315 -4,695 -7,225 -517 -165 -3,364	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5																														
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -7,225 -517 -165 -3,364 -180	-4,695	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5	5	-65.2	-65.2	-65.2	-65.2 -1	04 -10	4 -104	-104	-104	-217	-217	-217 -2	217 -217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-900	-96	-96	-96	-96	-96	-96	-96
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -67 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -7,225 -5,17 -165 -3,364 -180 -276	-11,726	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -3 -3 -3 -3 -2 -2 -3 -3 -3 -3 -3 -2 -2 -3 -3 -3 -1 -3 -3 -3 -1 -3 -1 -3 -1 -1 -3 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1 -1	5 -2655 1 -210 0 -406 6 -1066 44 -744 44 -244 1 -414 1 -414 2 -352 6 -216 6 -216 6 -216 6 -217 6 -21	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			-65.2 -65.2		04 -10: 04 -10:											-217 -217		-217				-217 -217	-900	-96 -96				-96 -96	-96 -96	-96 -96
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -67 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -7,225 -5,17 -165 -3,364 -180 -276	-11,726 -16,421	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,1741,174	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -3 -3 -3 -3 -2 -2 -2 -3 -3 -3 -3 -2 -2 -1 -1 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	5 -2655 1 -210 0 -400 6 -1066 4 -774 4 -244 4 -244 4 -244 4 -344 2 -352 6 -216 6 -216 6 -216 6 -1,439 9 -1,439	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	-65	-65	-65	-65 -1	04 -104	4 -104	-104	-104	-217	-217	-217 -2	17 -217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-900	-96	-96	-96	-96	-96	-96	-96
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Open Pit Processing Infrastructure Vaste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Sustaining Capital Costs Net Cash Flow	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -67 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -7,225 -5,17 -165 -3,364 -180 -276	-11,726	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -1,1741,1741,232	-265 -261 -26 -261 -2 -2 -26 -261 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5 -2655 1 -210 -210 -4446 66 -10666 -10666 44 -7444 -244 11 -411 -411 -411 -411 19 -399 -399 22 -222 -352 26 -2166 -2169 -2169 69 -1,1744 00 -309 -1,1744	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	-65 926	-65 926	-65 926	-65 -1 926 9	04 -104 26 926	4 -104 6 926	-104 926	-104 926	-217 1,093	-217 1,093	-217 -2 1,093 1,0	:17 -217 :93 1,093	-217 1,093	-900 905	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750									
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Net Cash Flow Cumulative Cash Flow Cumulative Cash Flow	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -67 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -7,225 -517 -165 -3,364 -180 -276 -11,727	-11,726 -16,421 88,689	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -1,1741,1741,232	-265 -261 -26 -21 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -3 -3 -3 -3 -2 -2 -2 -3 -3 -3 -3 -2 -2 -1 -1 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3 -3	5 -2655 1 -210 -210 -4446 66 -10666 -10666 44 -7444 -244 11 -411 -411 -411 -411 19 -399 -399 22 -222 -352 26 -2166 -2169 -2169 69 -1,1744 00 -309 -1,1744	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	-65 926	-65 926	-65 926	-65 -1 926 9	04 -104	4 -104 6 926	-104 926	-104 926	-217	-217 1,093	-217 -2 1,093 1,0	17 -217	-217 1,093	-217	-217 1,093	-217 1,093	-217	-217 1,093	-217 1,093	-217 1,093	-217 1,093	-217 1,093	-900 905	-96 1,750	-96	-96 1,750	-96 1,750	-96	-96 1,750	-96 1,750
Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow NPV @ 0% DROR	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -3,315 -4,695 -7,225 -517 -165 -3,364 -180 -276 -11,727	-11,726 -16,421 88,689 88,689	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -1,1741,1741,232	-265 -261 -26 -261 -2 -2 -26 -261 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5 -2655 1 -210 -210 -4446 66 -10666 -10666 44 -7444 -244 11 -411 -411 -411 -411 19 -399 -399 22 -222 -352 26 -2166 -2169 -2169 69 -1,1744 00 -309 -1,1744	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	-65 926	-65 926	-65 926	-65 -1 926 9	04 -104 26 926	4 -104 6 926	-104 926	-104 926	-217 1,093	-217 1,093	-217 -2 1,093 1,0	:17 -217 :93 1,093	-217 1,093	-900 905	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750									
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Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 9% DROR NPV @ 978 DROR NPV @ 795 DROR	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -67 -1534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -7,225 -5,17 -165 -3,364 -180 -276 -11,727 -87,329 -12,941 -6,812	-11,726 -16,421 88,689 88,689 13,899 7,526	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -1,1741,1741,232	-265 -261 -26 -261 -2 -2 -26 -261 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5 -2655 1 -210 -210 -4446 66 -10666 -10666 44 -7444 -244 11 -411 -411 -411 -411 19 -399 -399 22 -222 -352 26 -2166 -2169 -2169 69 -1,1744 00 -309 -1,1744	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	-65 926	-65 926	-65 926	-65 -1 926 9	04 -104 26 926	4 -104 6 926	-104 926	-104 926	-217 1,093	-217 1,093	-217 -2 1,093 1,0	:17 -217 :93 1,093	-217 1,093	-900 905	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750									
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Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Currulative Cash Flow NPV @ 9% DROR NPV @ 10% DROR IRR	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-1,058 -84 -161 -422 -294 -98 -162 -155 -87 -1534 -1,407 -866 -5,757 -3,74 -121 -1,315 -4,695 -7,225 -5,17 -165 -3,364 -1,727 -1	-11,726 -16,421 88,689 88,689 13,899 7,526 5,576 2,995 15,2	-265 -21 -40 -106 -74 -24 -41 -39 -22 -134 -352 -216 -1,439 -1,1741,1741,232	-265 -261 -26 -261 -2 -2 -26 -261 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	5 -2655 1 -210 -210 -4446 66 -10666 -10666 44 -7444 -244 11 -411 -411 -411 -411 19 -399 -399 22 -352 26 -2166 -2166 27 -352 26 -2169 -1174 27 -1174 28 -1174 29 -1174 40 -1174 41 -1174 41 -1174 42 -1174 42 -1174 42 -1174 42 -1174	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	-65 926	-65 926	-65 926	-65 -1 926 9	04 -104 26 926	4 -104 6 926	-104 926	-104 926	-217 1,093	-217 1,093	-217 -2 1,093 1,0	:17 -217 :93 1,093	-217 1,093	-900 905	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750	-96 1,750									

Proposed Pebble Project DEIS Technical Review of Economic Feasibility 78-Year Mine Resource Case Technical Memorandum No. 5, Attachment 5A-2a Page 1 of 3

Pebble Mine Pro Forma 2011 Preliminary Assessment 78-Year Mine Resource Case

78-Year Mine Resource Case																																						
Description	Units		alculated										,								Year			.,														
		Actual	Total	35	36	37 3	8 39	9 4	10 4	41 .	42	43 4	4 45	46	47	48	49	50	51	52	53 5	55	56	57	58	59	60	61 62	2 63	64	4 65	5 6	66	67	68 6	59 7	0 7	1 72
Production																· · · · · · · · · · · · · · · · · · ·								Τ														
Mining			6.506												26		200	0.0							200													- 00
Ore Waste	t		6,526 17,247	89 177	89 177	177		177	89 177	177	89 177	89 177		89 8	36 86 12 11:			112	112	112	112	86 8 112 11	2 113			112	86 112			_	426 426	82 426	82 426	82 426	82 426	426	82 426	82 426
Strip Ratio (Waste/Ore)	+ ' +		2.6	2.0	2.0			2.0	2.0	2.0	2.0	2.0			.3 1.3	+		1.3	13	1.3			.3 1.3			1.3	1.3					5.2	5.2	5.2	5.2	5.2		5.2
Processing			2.0	2.0		2.0							2.0				1		1.0		1.0			1.0	1.0	7.0	****	3.2	J.E			J.E.			J.E			
Ore Milled	t	6,528	6,526	89	89	89	89	89	89	89	89	89	89	89 8	36 86	6 86	86	86	86	86	86	86 8	86 86	86	86	86	86	82	82	82	82	82	82	82	82	82	82	82
Cu Grade	%	0.47		0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55 (.55 0.4	18 0.4	0.48	0.48	0.48	0.48	0.48	0.48	0.48 0.4	8 0.4	0.48	0.48	0.48	0.48	0.47	0.47 0.	47 C	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47 (
Au Grade	oz./t	0.0108		0.011	0.011	0.011 0	0.011 0.	.011 (0.011	0.011	0.011	0.011	0.011 0.	0.010	0.010	0.0106	0.0106	0.0106	0.0106	0.0106	0.0106 0.0	106 0.010	0.010			0.0106	0.0106	0.0095 0.0	0.00	95 0.00	0.0	0095 0.	0.0095	0.0095 0	0.0095 0.	.0095 0.	0095 0.	0.0
Mo Grade	ppm	243												2.3 267	_			267.9	267.9		267.9 2	67.9 267				267.9			01.8 30			301.8						301.8 30
Cu Recovery	%	88		89	89	89	89	89	89	89	89	89	89	89 8	39 89		·	89	89	89	89		89 89			89	89	89			89	89	89	89	89	89	89	89
Au Recovery	%	71		71	71	71	71	71	71	71	71	71	71	71 7	71 7		ļ	71	71	71	71		1 7			71	71	71			71	71	71	71	71	71	71	71
Mo Recovery Concentrate Production	%	89		90	90	90	90	90	90	90	90	90	90	90 9	91 9	1 91	91	91	91	91	911	91 9	01 9	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91
Cu Au Concentrate																 															-+							
Cu Pounds	Mlb.	53,437	53,346	867	867	867	867	867	867	867	867	867	867	367 73	35 73	5 735	735	735	735	735	735	735 73	5 73	735	735	735	735	685	685 6	85 (685	685	685	685	685	685	685	685
Au Ounces	koz.	50,133	49,810	692	692				692	692	692	692		592 64				648	648	648		648 64				648	648					552	552	552	552	552		552
Ag Ounces	koz.	241,719		3,099	3,099	3,099 3	3,099 3,	099 3	3,099	3,099	3,099	3,099	3,099 3,	99 3,09	3,09	3,099	3,099	3,099	3,099	3,099	3,099 3	099 3,09	9 3,099	3,099	3,099	3,099	3,099	3,099 3,	,099 3,0	99 3,0	,099 3,	3,099	3,099	3,099	3,099	3,099	3,099	3,099 3,
Rh Kilograms	Kkg	2,312		30	30	30	30	30	30	30	30	30	30	30 3	30 30	30	30	30	30	30	30	30 3	30 30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
Pd Ounces	Koz.	1,589		20	20	20	20	20	20	20	20	20	20	20 2	20 20) 20	20	20	20	20	20	20 2	20 20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Mo Concentrate																																						
Mo Pounds	Mlb.	2,835	2,800	39	39	39	39	39	39	39	39	39	39	39 4	42 4.	2 42	42	42	42	42	42	42 4	12 4	2 42	42	42	42	45	45	45	45	45	45	45	45	45	45	45
Revenue Metal Prices	T T	т .	Т			т т	Т	- T	T	T	- 1				T	T	1	Т	T	- T	- T		T	T	T	T	T	Т	Т	- T					т т		- 1	- T
Metal Prices Cu	\$/lb.	2.50		2.50	2.50	2.50	2.50 2	2.50	2.50	2.50	2.50	2.50	2.50 2	.50 2.5	50 2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50 2.5	60 2.50	2.50	2.50	2.50	2.50	2.50	2.50 2.	50 2	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Au	\$/oz.	1,050.00					50.00 1.050		50.00 1.0					.00 1.050.0						1.050.00 1.0		0.00 1.050.0							0.00 1.050					050.00 1.0				50.00 1.050
Mo	\$/lb.	13.50								13.50				.50 13.5			·	13.50	13.50			3.50 13.5				13.50	13.50		3.50 13.				13.50					13.50 13
Ag	\$/oz.	15.00					15.00 15	5.00	15.00	15.00		-		.00 15.0	00 15.00	15.00	15.00	15.00	15.00		15.00 1	5.00 15.0				15.00	15.00		5.00 15.			5.00	15.00	15.00			15.00	15.00 1
Rh	\$/kg.	3,000.00		3,000.00 3,							000.00 3,0			.00 3,000.0				3,000.00			000.00 3,00							00.00 3,00										00.00 3,000
Pd	\$/oz.	490.00		490.00	490.00 4	190.00 49	90.00 490	0.00 49	90.00 4	190.00 4	490.00	190.00 4	30.00 490	.00 490.0	00 490.00	490.00	490.00	490.00	490.00	490.00	490.00 49	0.00 490.0	00 490.00	490.00	490.00	490.00	490.00	190.00 49	0.00 490.	00 490	0.00 49	0.00 4	190.00	490.00 4	190.00 4	90.00 49	90.00 49	90.00 490
Gross Revenue	 		432.22		2455	2452	2460			2455	2455	2455	1450				 		4.000	4.03	1.000			 				4.742	74.7	47	74.3	742	4745			. 743		. 742
Cu	\$M		133,366 52,301						2,168 : 727					168 1,83 727 68				1,838	1,838	1,838		838 1,83 680 68				1,838	1,838		,713 1,7			580	1,713 580	1,713 580	1,713 580	1,713 1 580		1,713 1, 580
Au Mo	\$M \$M		37,797	727 522	727 522	-		_	522	727 522	727 522	727 522		27 68 522 56				680 567	680 567	567		567 56	680 67 56			567	567					607	607	607	607	607		580 607
Ag	\$M		31,131	42	42	42		42	42	42	42	42	42	_+	12 4			42	42	42	42		12 42			42	42			_	42	42	42	42	42	42	42	42
Rh	\$M			80	80	80		80	80	80	80	80	80		30 80				80	80	80		80 80			80	80					80	80	80	80	80	80	80
Pd	\$M			9	9	9	9	9	9	9	9	9	9	9	9 9	9 9	9	9	9	9	9	9	9 9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Total Gross Revenue	\$M	233,908	233,670	3,548	3,548	3,548 3	3,548 3,	548	3,548	3,548	3,548	3,548	3,548 3,	3,2	16 3,21	3,216	3,216	3,216	3,216	3,216	3,216 3	216 3,21	6 3,21	3,216	3,216	3,216	3,216	3,031 3,	,031 3,0	31 3,0	,031 3,	3,031	3,031	3,031	3,031	3,031 3	3,031	3,031 3,
Realization Charges	\$M	-19,938	-19,937	-311	-311					-311	-311			311 -28				-281	-281	-281		281 -28				-281	-281						-268	-268				-268 -
Net Smelter Revenue	\$M	213,970	213,733	3,236	3,236	3,236	3,236 3,	236	3,236	3,236	3,236	3,236	3,236 3,	2,93	35 2,93	5 2,935	2,935	2,935	2,935	2,935	2,935 2	935 2,93	5 2,93	2,935	2,935	2,935	2,935	2,763 2,	,763 2,7	63 2,	,763 2,	2,763	2,763	2,763	2,763	2,763 2	2,763	2,763 2,
Operating Costs	T T															.,									T													
Operating Cost	\$M	-96,063	-96,063				<u> </u>						· · · · · · · · · · · · · · · · · · ·	80 -1,08					-1,086			086 -1,08				-1,086			,881 -1,8			·						1,881 -1,
Operating Cost Operating Profit	\$M	-96,063 117,906	-96,063 117,670				<u> </u>						· · · · · · · · · · · · · · · · · · ·	180 -1,08 056 184					-1,086 1849	-1,086 1849		086 -1,08 849 184				-1,086 1849	-1,086 1849		·			·	-1,881 881	-1,881 - 881		1,881 -1 881		1,881 -1, 881
Operating Cost Operating Profit Royalties and Local Production Taxes			117,670	2056	2056	2056	2056 2	056	2056	2056	2056	2056	2056 2	056 184	19 184	1849	1849	1849	1849	1849		849 184	19 1849	1849	1849	1849	1849	881	881 8	81 (881	·	881	881	881	881	881	881
Operating Cost Operating Profit						2056 . -103	2056 2 -103 -	103					2056 2 -103 -)56 184 103 -9	19 184	9 1849 2 -92	1849 -92	1849			1849 1	-92 -9		1849	1849 -92			881 -44	881 8	81 44	-44	881						
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback			117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -)56 184 103 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	1849 -92	-92 -98	1849 1 -92 -98	-92 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	1849 -92	1849 -92	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	881	881 -44	881 -44	-44	-44 -53	-44 -53	-44
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs			117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs	k	117,906	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Ryalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining	k	117,906 -431	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process	\$M \$M	-431 -1,058	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration	\$M \$M \$M \$M	-431 -1,058 -84	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process	\$M \$M	-431 -1,058	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant	\$M \$M \$M \$M \$M	-431 -1,058 -84 -161	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure	\$M	-421 -1,058 -84 -161 -422	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road	\$M	-421 -1,058 -84 -161 -422	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure	\$M	-431 -1,058 -84 -161 -422 -294 -98 -162 -155	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process	\$M	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	-44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation	\$ \$M \$ \$	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs	\$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$M \$	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency	\$ \$M \$ \$	-431 -1,058 -84 -161 -422 -294 -162 -155 -67 -534 -1,407	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs	\$M	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment	\$ \$M \$ \$	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -1,315	117,670 -5,842 -6,718	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	\$ \$M \$ \$	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121	117,670 -5,842	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs	\$ \$M \$ \$	-431 -1,058 -84 -161 -422 -294 -162 -155 -67 -534 -1,407 -866 -5,757 -374 121 1,315 -4,695	117,670 -5,842 -6,718	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	-92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Rayalties and Local Production Taxes Tech 49% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 1,315 -4,695	117,670 -5,842 -6,718	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Open Pit Processing	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -162 -155 -67 -534 -1,407 -866 -5,757 -374 121 1,315 -4,695	117,670 -5,842 -6,718	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Rayalties and Local Production Taxes Tech 49% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 1,315 -4,695	117,670 -5,842 -6,718	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Open Pit Processing Infrastructure	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -3,74 121 1,315 -4,695 -7,225 -7,225 -7,225 -7,165	117,670 -5,842 -6,718	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	19 1849 92 -93 98 -94	9 1849 2 -92 8 -98	1849 -92 -98	1849 -92 -98	-92 -98	-92 -98	1849 1 -92 -98	-92 -98 -9	19 1849 12 -92 18 -94	9 1849 2 -92 3 -98	-92 -98	-92 -98	-92 -98	-44 -53	881 8 -44 - -53 -	81 44 53	-44 -53	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	-44 -53
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 496 Pre-Payback, 596 Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 13,15 -4,693 -7,225 -517 -165 -3,364 -3,364 -3,276	-4,695	-103 -108	2056 -103 -108	2056 . -103 -108	2056 2 -103 - -108 -	103 108	-103 -108	2056 -103 -108	2056 -103 -108	2056 -103 -108	2056 2 -103 - -108 -	056 184 103 -9 108 -9	49 184* 302 -9; 308 -9; 308 1,656	9 1849 2 -922 8 -928 8 1.658	1849 -92 -98 1,658	1849 -92 -98 1,658	1849 -92 -98 1.658	1849 -92 -98 1,658	1849 1 -92 -98 1,658 1	849 184 -92 -5 -98 -6 658 1,65	184* 192 -9:22 198 -9:18 198 1,65:4	9 1849 2 -92 3 -98 3 1,658	1849 -92 -98 1,658	-92 -98	-92 -98	881 -44 -53 784	881 8 -44 - -53 -	44 44 53 84 7	-444 -53 784	-44 -53	-44 53	-44 -53	-44 -53	-44 -53	-44 -53	881 -44 -53 784
Operating Cost Operating Profit Royalsties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Uses Management Other Molybdenum Autoclave Uses Management Other Molybdenum Autoclave Uses Management Other Molybdenum Autoclave	SM SM SM SM SM SM SM SM	-431 -1,058 -442 -161 -422 -294 -162 -155 -87 -534 -1,407 -374 -1,407 -374 -4,695 -7,225 -7,225 -7,225 -3,364 -180	-117,670 -5,842 -6,718 -4,695	2056 -103 -108 1.845	2056 -103 -108 1,845 -108 1,845	2056 -103 -108 1,845 1	2056 2 -103 - -108 - 1.845 1,	103 108 845 -96	2056 -103 -108 1,845	-103 -108 1,845 -108 1,845	2056 -103 -108 1,845 -108 1,845	2056 -103 -108 1,845	2056 2 -103 - -108 - 1,845 1,	056 184 103 -5 108 -	49 184* 302 -9; 388 -9; 368 1,656	9 1849 2 - 922 8 - 928 8 1,658	1849 -92 -98 1,658	1849 -92 -98 1,658	1849 -92 -98 1.658	1849 -92 -98 1,658	1849 1 -92 -98 1.658 1	849 184 -92 -5 -98 -5 -658 1,65	19 184* 192 -9:22 193 -9:38 194 -9:38 195 -9:38 196 -9:38 197 -9:38 197 -9:38 198 -9:3	9 1849 2 -92 3 -98 3 1,658	1849 -92 -98 1.658	1849 -92 -98 1,658	1849 -92 -98 1,658	881 -44 -53 784	881 8 8 -44453784 7	81 44 44 53 84 -	-44 -53 784	881 -44 -53 784 -176	881 -44 -53 784	881 -44 -53 784	881 -44 -53 784	-44 -53 784	-44 -53 784	881 -44 -53 784
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Usastaining Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Stustaining Capital Costs Total Capital Costs	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 13,15 -4,693 -7,225 -517 -165 -3,364 -3,364 -3,276	-4,695 -11,726 -16,421	2056 -103 -108 1.845 -108 1.845	-103 -108 -108 1,845	2056 -103 -108 1,845 1	-96 -96	-96 -96	2056 -103 -108 1,845 -108 1,845	-103 -108 1,845 -109 1,845	2056 -103 -108 1,845 -108 1,845	-103 -108 1,845 -108 1,845	2056 2 -103 - -108 - 1,845 1,	036 184 03 -5 008 -5 045 1,65 1,	49 184* 32 -9.3 38 -9.8 38 1,654 38 1,655 38 1,655 38 1,655 38 1,655 38 1,655 38 1,655 38 1,655	2 -92 2 -92 8 -92 8 1,656	1849 -92 -98 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -1658 1 -115 -115 -115	849 184 -92 -5 -98 -5 658 1,65 -115 -11	184* 122 -9.2 18 -9.9 18 1,654 1,654 5 -11: 5 -11: 5 -11:	9 1849 2 -92 3 -98 3 1.658 3 1.658	1849 -92 -98 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	881 -44 -53 784 -176 -176 -176	881 8 -4453784 7	81 44 44 53 84 :	-44453 784	881 -44 -53 784 -176 -176	-176 -176	-176 -176	-176 -176	-176 -176	-44 -53 -784 -784 -776 -776	881 -44 -53 784
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 496 Pre-Payback, 596 Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Total Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 13,15 -4,693 -7,225 -517 -165 -3,364 -3,364 -3,276	-117,670 -5,842 -6,718 -4,695	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 -109 -96 -96 1,750	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96 -1,750 -1,750 -2056 -2	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	-96 -96 1,750 1,750	056 184 103 -5 108 -	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -115 5 -115 8 1,543	-115 -1543	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 1115 -11 115 -11 1543 1,54	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453	-176 -176 -608	-176 -608	-176 -176 -608	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784 -176 -176 -08
Operating Cost Operating Profit Royalsties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Tatal Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Total Capital Costs Total Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -3,74 121 1,315 -4,695 -7,225 -517 -165 -3,364 -126 -11,727	-4,695 -11,726 -16,421 -88,689	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	-96 -96 1,750 1,750	036 184 03 -5 008 -5 045 1,65 1,	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -115 5 -115 8 1,543	1849 -92 -98 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 -115 -11	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453 784	-176 -176 -608	-176 -608	-176 -176	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Uniform Coulour Costs Contingency Sub-Total Capital Costs Total Capital Costs Sustaining Capital Costs Total Capital Costs Net Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Total Capital Costs Net Cash Flow Currulative Cash Flow NPV @ 0% DROR	\$ \$M \$ \$	-431 -1,058 -84 -161 -422 -294 -162 -155 -67 -534 -1,407 -866 -5,757 -3,74 -121 1,315 -4,695 -7,225 -517 -165 -3,364 -180 -276 -11,727	-4,695 -11,726 -16,421 -8,689 -88,689	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 -109 -96 -96 1,750	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96 -1,750 -1,750 -2056 -2	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	-96 -96 1,750 1,750	056 184 103 -5 108 -	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -115 5 -115 8 1,543	-115 -1543	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 1115 -11 115 -11 1543 1,54	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453	-176 -176 -608	-176 -608	-176 -176 -608	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784 -176 -176 -08
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Sustaining Capital Costs Total Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 0% DROR	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 1,315 -4,695 -7,225 -3,364 -180 -276 -11,727	-4,695 -11,726 -16,421 -8,689 -3,899	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 -109 -96 -96 1,750	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96 -1,750 -1,750 -2056 -2	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	-96 -96 1,750 1,750	056 184 103 -5 108 -	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -115 5 -115 8 1,543	-115 -1543	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 1115 -11 115 -11 1543 1,54	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453	-176 -176 -608	-176 -608	-176 -176 -608	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784 -176 -176 -08
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-pPayback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Net Cash Flow Net Q % DROR NPV @ 9% DROR NPV @ 7% DROR	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -162 -155 -67 -534 -1,407 -866 -5,757 -3,74 -121 1,315 -4,695 -7,225 -517 -165 -3,364 -180 -276 -11,727	-4,695 -11,726 -16,421 -8,689 -13,899 -7,526	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 -109 -96 -96 1,750	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96 -1,750 -1,750 -2056 -2	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	2056 2 -103 - -108 - -1,845 1, -1,845 1, -96 - -96 1,750 1,	056 184 103 -5 108 -	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -1155 5 -1155 8 1.543	-115 -1543	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 1115 -11 115 -11 1543 1,54	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453	-176 -176 -608	-176 -608	-176 -176 -608	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784 -176 -176 -08
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Sustaining Capital Costs Total Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 0% DROR	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 13,15 -4,693 -7,225 -517 -165 -3,364 -180 -180 -180 -180 -180 -180 -180 -180	-4,695 -11,726 -16,421 -8,689 -3,899	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 -109 -96 -96 1,750	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96 -1,750 -1,750 -2056 -2	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	2056 2 -103 - -108 - -1,845 1, -1,845 1, -96 - -96 1,750 1,	056 184 103 -5 108 -	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -1155 5 -1155 8 1.543	-115 -1543	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 1115 -11 115 -11 1543 1,54	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453	-176 -176 -608	-176 -608	-176 -176 -608	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784 -176 -176 -08
Operating Cost Operating Profit Rayalsties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Under Costs Contingency Sub-Total Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 7% DROR NPV @ 5% DROR NPV @ 7% DROR NPV @ 8% DROR NPV @ 8% DROR	\$ \$M \$ \$	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -1,215 -4,695 -7,225 -5,757 -165 -3,364 -180 -180 -180 -180 -180 -180 -180 -180	-117,670 -5,842 -6,718 -4,695 -11,726 -16,421 88,689 13,899 7,526 5,576	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 -109 -96 -96 1,750	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96 -1,750 -1,750 -2056 -2	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	2056 2 -103 - -108 - -1,845 1, -1,845 1, -96 - -96 1,750 1,	056 184 103 -5 108 -	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -1155 5 -1155 8 1.543	-115 -1543	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 1115 -11 115 -11 1543 1,54	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453	-176 -176 -608	-176 -608	-176 -176 -608	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784 -176 -176 -08
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Contingency Sub-Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs University Company Sub-Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Total Capital Costs Sustaining Capital Costs Fore Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 9% DROR	SM SM SM SM SM SM SM SM	117,906 117,906 -431 -1,058 -84 -161 -422 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -1,407 -1,215 -4,695 -7,225 -517 -165 -3,364 -1,80 -276 -11,727 87,329 12,941 6,812 4,964 2,545	-4,695 -4,695 -11,726 -16,421 88,689 13,899 7,526 5,576 2,995	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 -109 -96 -96 1,750	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96 -1,750 -1,750 -2056 -2	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	2056 2 -103 - -108 - -1,845 1, -1,845 1, -96 - -96 1,750 1,	056 184 103 -5 108 -	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -115 5 -115 8 1,543	-115 -1543	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 1115 -11 115 -11 1543 1,54	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453	-176 -176 -608	-176 -608	-176 -176 -608	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784 -176 -176 -08
Operating Cost Operating Profit Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-p\Payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tallings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Upen Pit Processing Infrastructure Molybdenum Autoclave Total Capital Costs Upen Pit Processing Infrastructure Molybdenum Autoclave Total Capital Costs Upen Pit Processing Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 9% DROR NPV @ 9% DROR NPV @ 10% DROR IRR	SM SM SM SM SM SM SM SM	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 1315 -4,695 -3,364 -180 -276 -11,727 -10,841	-4,695 -11,726 -16,421 -16,421 -16,421 -16,421 -16,421 -16,421 -16,421 -16,421 -16,421 -16,421 -16,421 -16,421 -16,221	2056 -103 -108 1.845 -108 1.845 -108	2056 -103 -108 1,845 -108 1,845 	2056 -103 -108 1,845 1 -96 -96 -96 -96	-96 -96 -1,750 -1,750 -2056 -2	-96 -96 -750	-96 -96 -1,750	-103 -108 1.845 -108 1.845	2056 -103 -108 1,845 -108 1,845	-96 -96 -1,750	2056 2 -103 - -108 - -1,845 1, -1,845 1, -96 - -96 1,750 1,	056 184 103 -5 108 -	49 184* 302 -9; 38 -9; 38 1,65; 38 1,65; 39 1,65; 30 1,65; 31 1,54; 31 1,54; 32 1,54;	9 1849 2 -922 8 -928 8 1.656 5 -115 5 -115 8 1,543	-115 -1543	1849 -92 -98 1,658 1,658	1849 -92 -98 1.658 1.658	1849 -92 -98 1,658 1,658	1849 1 -92 -98 1,658 1 -115 -115 -115 1,543 1	849 184 -92 -5 -98 -5 658 1,65 1115 -11 115 -11 1543 1,54	184* 192	1849 2 -92 3 -98 3 1,658 5 -115 5 -115 3 1,543	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	1849 -92 -98 1,658 1,658	-17617617608	881 8 -4453784 7	81 44 44 53 84 -	-44453	-176 -176 -608	-176 -608	-176 -176 -608	-176 -176 608	-176 -176 608	-176 -176 608	881 -44 -53 784 -176 -176 -08

Pebble Mine Pro Forma 2011 Preliminary Assessment 78-Year Mine Resource Case

Description	Units	2011	Calculated Total	70	73		ar 76	77	78
December 1990	l	Actual	ıOtal	73	74	75	10	11	1 18
Production	ı								r
Mining Ore	t		6,526	82	82	82	82	82	8
Waste	t		17,247	426	426	426	426	426	42
Strip Ratio (Waste/Ore)	<u> </u>		2.6	5.2	5.2	5.2	5.2	5.2	5.
Processing									
Ore Milled	t	6,528	6,526	82	82	82	82	82	8
Cu Grade	%	0.47		0.47	0.47	0.47	0.47	0.47	0.4
Au Grade	oz./t	0.0108		0.0095	0.0095	0.0095	0.0095	0.0095	0.009
Mo Grade	ppm	243		301.8	301.8	301.8	301.8	301.8	301.
Cu Recovery	%	88		89	89	89	89	89	8
Au Recovery	%	71		71	71	71	71	71	7
Mo Recovery	%	89		91	91	91	91	91	9
Concentrate Production									
Cu Au Concentrate									
Cu Pounds	Mlb.	53,437	53,346	685	685	685	685	685	68
Au Ounces	koz.	50,133	49,810	552	552	552	552	552	55
Ag Ounces	koz.	241,719		3,099	3,099	3,099	3,099	3,099	3,09
Rh Kilograms	Kkg	2,312		30	30	30	30	30	3
Pd Ounces	Koz.	1,589		20	20	20	20	20	2
Mo Concentrate									
Mo Pounds	Mlb.	2,835	2,800	45	45	45	45	45	4
levenue									
Metal Prices									
Cu	\$/lb.	2.50		2.50	2.50	2.50	2.50	2.50	2.5
Au	\$/oz.	1,050.00		1,050.00	1,050.00	1,050.00	1,050.00	1,050.00	1,050.0
Мо	\$/lb.	13.50		13.50	13.50	13.50	13.50	13.50	13.5
Ag	\$/oz.	15.00		15.00	15.00	15.00	15.00	15.00	15.0
Rh	\$/kg.	3,000.00		3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.0
Pd	\$/oz.	490.00		490.00	490.00	490.00	490.00	490.00	490.0
Gross Revenue									
Cu	\$M		133,366	1,713	1,713	1,713	1,713	1,713	1,71
Au	\$M		52,301	580	580	580	580	580	58
Мо	\$M		37,797	607	607	607	607	607	60
Ag	\$M			42	42	42	42	42	4.
Rh	\$M			80	80	80	80	80	- 81
Pd	\$M			9	9	9	9	9	
Total Gross Revenue	\$M	233,908	233,670	3,031	3,031	3,031	3,031	3,031	3,03
Realization Charges	\$M	-19,938	-19,937	-268	-268	-268	-268	-268	-26
Net Smelter Revenue	\$M	213,970	213,733	2,763	2,763	2,763	2,763	2,763	2,76
Operating Costs		,							
Operating Cost	\$M	-96,063	-96,063	-1,881	-1,881	-1,881	-1,881	-1,881	-1,881
Operating Profit		117,906	117,670	881	881	881	881	881	88
Royalties and Local Production Taxes									
Tech 4% Pre-Payback, 5% Post-p\Payback			-5,842	-44	-44	-44	-44	-44	-4
Local Production Taxes (5%)			-6,718	-53	-53	-53	-53	-53	-5.
Gross Profit		l		784	784	784	784	784	784
Costs	l .								
Capital Costs Mining	\$M	-431							
	 	-1,058							
Process	\$M	-1,056							
Molybdenum Saration Secondary Gold Plant	\$M								
Infrastructure	\$M \$M	-161 -422							
	SM SM	-422							
Tailings Pipelines		-294							
	\$M								
Access Road	\$M	-162 -155							
Port infrastructure	\$M								
Port process	\$M	-87							
Power generation	\$M	-534 -1,407							-
Indirect costs	\$M								
Contingency Sub-Total Capital Costs	\$M \$M	-866 -5,757							
Molybdenum Autoclave	\$M	-5,/5/							
Escalation/De-escalation Adjustment	\$M \$M	-374 121							-
Outsourced Infrastructure		1,315							
Total Capital Costs	SM SM	-4,695	-4,695						
Sustaining Capital Costs	Į pivi	-4,035	-4,095						1
Open Pit	\$M	-7,225							l
Processing	\$M	-7,225							<u> </u>
Infrastructure	\$M	-517							
Waste Management	\$M	-3,364							
Other	\$M	-3,364							-
Molybdenum Autoclave	\$M	-276							
Total Sustaining Capital Costs	\$M	-11,727	-11,726	-176	-176	-176	-176	-176	-17
Total Capital Costs	ÇIVI	11,727	-16,421	-176	-176	-176	-176	-176	-17
Net Cash Flow			88,689	608	608	608	608	608	60
Cumulative Cash Flow	 	 	30,003	85,648	86,256	86,864	87,472	88,080	88,68
NPV @ 0% DROR	\$M	87,329	88,689	03,040	00,230	00,004	01,412	00,000	00,00
NPV @ 5% DROR	\$M	12,941	13,899						-
NPV @ 7% DROR	\$M	6,812	7,526						
NPV @ 8% DROR	\$M	4,964	5,576						
NPV @ 10% DROR	\$M	2,545	2,995						-
	%	14.5	15.2						-
IRP			15.4				i	i	L
IRR Pavhack									
IRR Payback Taxes	years	6.1	6.3						

Pebble Mine Pro Forma 2011 Preliminary Assessment 45-Year Mine Resource Case

45-Year Mine Resource Case																																				
	. 1	2011	Calculated																		Yea	ar .														
Description Un	iits I	Actual	Total		-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13			16	7 18	19	20	21 22	23	24	25	26	27	28	29	30	31 32
Production	1				.	<u>-</u>																														, , , , , , , , , , , , , , , , , , ,
Mining		Т			T						T					T			T						T	T T	T		T			·····			T	
Ore t	t		3.76	1				67	67	67	67	67	73	73	73	73	73	86	86	86	86	86	86	86	86 86	86	86	86 8	6 86	86	89	89	89	89	89	89 89
Waste			7,90		†			67	67	67	67	67	95	95	95	95	95	241	241	241	241	241	241	241 2		ļ		241 24			177	177	177	177	177	177 177
Strip Ratio (Waste/Ore)			2.					1.0	1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8				2.8 2.			2.0	2.0	2.0	2.0	2.0	2.0 2.0
Processing				<u> </u>	<u> </u>																					2.0										
Ore Milled t	t	3,767	3,76	1				67	67	67	67	67	73	73	73	73	73	86	86	86	86	86	86	86	86 86	86	86	86 8	6 86	86	89	89	89	89	89	89 89
Cu Grade %	-	0.46	-,					0.36	0.36	0.36	0.36	0.36	0.34	0.34	0.34	0.34	0.34	0.38	0.38	0.38	0.38	0.38	0.38	0.38 0.				0.38 0.3			0.55	0.55	0.55	0.55	0.55	0.55 0.55
Au Grade oz	_	0.011									0.0112	0.0112			0.0107	0.0107	0.0107		0.0118	0.0118	0.0118	0.0118		0118 0.01				118 0.011			0.011	0.011	0.011	0.011		0.011 0.011
Mo Grade pp		214						171.1	171.1	171.1	171.1	171.1	158.8	158.8	158.8	158.8	158.8	183.5	183.5	183.5	183.5	183.5		183.5 183		 		33.5 183.			242.3	242.3	242.3	242.3		242.3 242.3
Cu Recovery %		88						82	82	82	82	82	86	86	86	86	86	87	87	87	87	87	87	87			87		7 87		89	89	89	89	89	89 89
Au Recovery %	%	71						70	70	70	70	70	70	70	70	70	70	72	72	72	72	72	72	72	72 72	72	72	72 7	2 72	72	71	71	71	71	71	71 71
Mo Recovery %	%	88						79	79	79	79	79	82	82	82	82	82	85	85	85	85	85	85	85	85 85	85	85	85 8	5 85	85	90	90	90	90	90	90 90
Concentrate Production																																				
Cu Au Concentrate																																				
Cu Pounds MI	lb.	30,494	29,98	5				393	393	393	393	393	427	427	427	427	427	569	569	569	569	569	569	569 5	69 569	569	569	569 56	9 569	569	867	867	867	867	867	867 867
Au Ounces Ko	DZ.	30,307	30,15	2				522	522	522	522	522	547	547	547	547	547	731	731	731	731	731	731	731 7	31 731	731	731	731 73	1 731	731	692	692	692	692	692	692 692
Ag Ounces Ko	oz.	140,423						1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800 1,8	00 1,800	1,800	1,800 1,	800 1,80	0 1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800 1,800
Rh Kilograms Kk	kg	1,158						15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15 15	15	15	15 1	5 15	15	15	15	15	15	15	15 15
Pd Ounces Ko	oz.	907						12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12 12	12	12	12 1	2 12	12	12	12	12	12	12	12 12
Mo Concentrate																																				
Mo Pounds MI	lb.	1,420	1,36	1				18	18	18	18	18	19	19	19	19	19	27	27	27	27	27	27	27	27 27	27	27	27 2	7 27	27	39	39	39	39	39	39 39
Revenue																																				
Metal Prices																T																				
Cu \$/I		2.50						2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50 2.				2.50 2.5			2.50	2.50	2.50	2.50	2.50	2.50 2.50
Au \$/c		1,050.00								,050.00 1,0			1,050.00		,050.00	1,050.00	1,050.00	1,050.00 1					1,050.00 1,0						0 1,050.00						1,050.00 1,0	
Mo \$/I		13.50			ļ			13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50		13.50 13.				3.50 13.5			13.50	13.50	13.50	13.50		13.50 13.50
Ag \$/c		15.00			ļ			15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00		15.00 15.				5.00 15.0		15.00	15.00	15.00	15.00	15.00		15.00 15.00
Rh \$/k		3,000.00			ļ				·	,000.000 3,4			3,000.00	7	,000.000								3,000.00 3,0			3,000.00			0 3,000.00			·	3,000.00			00.000 3,000.00
Pd \$/d	oz.	490.00		_	-			490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00 4	90.00 490.	00 490.00	490.00	490.00 49	0.00 490.0	0 490.00	490.00	490.00	490.00	490.00	490.00	490.00 4	190.00 490.00
Gross Revenue					1				000	000	0.00	622		1.00=	4.0.5	4 0 0 5	4.2.2	4 422	4 400	4 100		4 100	4.422	1 122	22	4 :00	4.405	100		4 100	2400	2455	24.55	2455	2462	2460 246
Cu \$N			74,96					983	983	983	983	983	1,067	1,067	1,067	1,067	1,067	1,423	1,423	1,423	1,423	1,423		1,423 1,4				423 1,42			2,168	2,168	2,168	2,168		2,168 2,168
Au \$M			31,66		 			548	548	548	548	548	574	574	574	574	574	768	768	768	768	768	768	768 7		 			8 768		727	727	727	727	727	727 727
Mo \$N			18,36	9	 			243	243	243	243	243	257	257	257	257	257	362	362	362	362	362	362	362 3		 			2 362		522	522	522	522	522	522 522 24 24
Ag \$N					+			40	24	24 40	40	24	24	24	24 40	24	24	24	24	24	24		24		24 24 40 40		24		4 24		40	24	24	24	24	
Rh \$M					-			40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40 40	40	40	40 4	0 40	40	40	40	40	40	40	40 40 5 5
Total Gross Revenue \$N		233,908	128,11	o			-	1,844	1.844	1,844	1,844	1.844	1.968	1,968	1.968	1,968	1,968	2,622	2.622	2,622	2,622	2,622	-	2,622 2,6	22 2,622	2,622	2,622 2	622 2,62	-	2,622	3,486	3,486	3.486	3,486	3,486	3,486 3,486
Realization Charges \$N	-	-11,089	-10,90					-145	-145	-145	-145	-145	-156	-156	-156	-156	-156	-211	-211	-211	-211	-211		-211 -2	_			211 -21	+ +	-211	-311	-311	-311	-311		-311 -311
Net Smelter Revenue \$M		120,197	117,21					1,699	1.699	1,699	1,699	1.699	1,811	1,811	1,811	1,811	1,811		2,411	2,411	2,411	2,411		2,411 2,4				411 2,41			3,175	3,175	3,175	3,175		3,175 3,175
Operating Costs	101	120,137	117,41	υ	1			1,055	1,000	1,000	ן פפס,ו	1,0991	1,0111	1,011	1,011	1,0111	1,011	2,4111	2,4111	2,411	2,411	2,4111	2,411]	2,411] 2,4	111 2,411	2,411	2,4111 2,	4111 2,41	1 2,411	2,411	3,173	3,1/5	3,175]	3,175]	3,1731	3,173 3,173
Operating Cost \$N	NA T	-96,063	-45,90	1 T	T		-269	-668	-668	-668	-668	-668	-723	-723	-723	-723	-723	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005 -	1,005 -1,0	05 -1,005	-1,005	-1,005 -1,	005 -1,00	5 -1,005	-1,005	-1,180	-1.180	-1,180	-1,180	-1,180 -	-1,180 -1,180
Operating Cost Sin	IVI	117,906	71.31		-		-269		1031	1031	1031	1031	1089	1089	1089	1089	1089	1407	1407	1407	1407	1407		1407 14				407 140			1994	1994	1994	1994		1994 1994
Royalties and Local Production Taxes		117,200	1 1 1 1 1	1			203	1031	1031	1031	1031	1031	1003	1003	1003	1003	1003	1407	140)	140)	1407	1407	1407	1407	1407	1407	1407	40) 140	1407	1407	1334	1334	1554	1554	1334	1554 1554
Tech 4% Pre-Payback, 5% Post-Payback			-3.52	8				-41	-41	-41	-41	-41	-54	-54	-54	-54	-54	-70	-70	-70	-70	-70	-70	-70 -	70 -70	-70	-70	-70 -7	0 -70	-70	-100	-100	-100	-100	-100	-100 -100
Local Production Taxes (5%)			-4,15		-59	-59	-59	-55	-55	-55	-55	-55	-60	-60	-60	-60		-81	-81	-81	-81	-81	-81	-81 -		 		-81 -8			-145	-105	-105	-105	-105	-105 -105
Gross Profit			11.0	-59				935	935	935	935	935	974	974	974	974			1,255	1,255	1,255			1,255 1,2				255 1,25			1,750	1,790	1,790	1,790		1,790 1,790
Costs																																				
Capital Costs	T			T	Τ						T					T									T	T	T									
Mining \$N	М	-431		-108	-108	-108	-108																													
Process \$N	М	-1,058		-265	-265	-265	-265																													
Molybdenum Saration \$N	М	-84		-21	-21	-21	-21																													
Secondary Gold Plant \$N	М	-161		-40	-40	-40	-40																													
Infrastructure \$N	M	-422		-106	-106	-106	-106																													
Tailings \$N	М	-294		-74	_		-74																								\Box					
Pipelines \$N	_	-98		24			-24																								\Box					
Access Road \$N		-162		-41			-41																			<u> </u>										
Port infrastructure \$N		-155		-39	33	33	-39																			 										
Port process \$N		-87		-22			-22																													
Power generation \$M		-534		-134																																
Indirect costs \$M		-1,407		-352					-+		-+		-		-+					\rightarrow					-	+			+	-+	-+	-+				\longrightarrow
Contingency \$M Sub-Total Capital Costs \$M		-866 -5.757		-216 -1,439	_		-216 -1,439																			+		_	+	-+	-+	-+				
Molybdenum Autoclave \$M		-3,737		-1,435			-1,439																		+	 -			+							
Escalation/De-escalation Adjustment \$N		121		-92			30																			 -			+							
Outsourced Infrastructure \$M		1,315		329								+												-	-	 		-	+	+						
Total Capital Costs \$M		-4.695	-4.69		-1,174															+		+			+	 -			+							
Sustaining Capital Costs		*******	7,02	- 1 1,1/-	. 1,17*		.,.,-1					I					<u></u>								1	1			1				1			
Open Pit \$M	мТ	-3,286			T		T			·····		T				····	T		T			····			T	T	T		T T			T				
	M	-230			 																					 -			+			-+				
Infrastructure \$N		-165		-	†																					 -			+							
Waste Management \$M		-2,211			+																				+	 -			+							
Other \$N		-104		-	 																					 -			+							
Molybdenum Autociave \$M		-144		1	1						+	-				- +	+	-	-	+	+	+		-		 			1	+	-+	+	-			
Total Sustaining Capital Costs \$N	-	-6,140	-6,82	8				-65.2	-65.2	-65.2	-65.2	-65.2	-104	-104	-104	-104	-104	-217	-217	-217	-217	-217	-217	-217 -2	17 -217	-217	-217	217 -21	7 -217	-217	-900	-96	-96	-96	-96	-96 -96
Total Capital Costs		·,,-	-11.52		-1,174	-1 174	-1174	-65	-65	-65	-65	-65	-104	-104	-104	-104	-104	-217	-217	-217	-217	-217		-217 -2				217 -21			-900	-96	-96	-96	-96	-96 -96
Net Cash Flow			52,11			-1,232		870	870	870	870	870	870	870	870	870	870	1,038	1,038	1,038	1,038	1,038		1,038 1,0				038 1,03			850	1.694	1,694	1,694		1,694 1,694
Cumulative Cash Flow		+	J6.,11	-1,232		-3,697					-1,719	-850	21	891	1,762	2,632	3,503		5,578	6,616	7,653	8,691		0,766 11,8				955 16,99				21,612				28,390 30,084
NPV @ 0% DROR \$N	м 🕂 —	55,278	52,11		-,-03	3,037	5,155	7,020	5,755	_,	.,, .,	- 550			.,, ٧٤	-,002	5,555	.,,,-0	5,5,0	3,010	.,000	3,031	-,,,	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		.5,5,5	,	10,33				- 1,012			,	, 50,004
NPV @ 5% DROR \$M	-	11,163	11.31		1				-+		-+	+			-+		-		+								-			-+	-+	-+	-			
NPV @ 7% DROR \$N	-	6,129	6,36								-+	-		-	-+		+		-+							+	-		+ +	-+	-+	-+	-+			
NPV @ 8% DROR \$M		4,510	4,73		†																				_	 -			+							
NPV @ 10% DROR SN		2,308	2,50		1																					 -										
IRR %		14.2	14.		†																					 -			+							
Payback yea		6.2	6.		1																					 -			+							
Taxes	-		· ·														-												+	-+	-+	_				
					1																										-					

Proposed Pebble Project DEIS Technical Review of Economic Feasibility 45-Year Mine Resource Case Technical Memorandum No. 5, Attachment 5A-2b Page 1 of 2

Pebble Mine Pro Forma 2011 Preliminary Assessment 45-Year Mine Resource Case

45-Year Mine Resource Case Description	Units	2011	Calculated							Year						
	Omis	Actual	Total	33	34	35	36	37	38	39	40	41	42	43	44	45
Production																
Mining Ore	t		3,761	89	89	89	89	89	89	89	89	89	89	89	89	89
Waste	t		7,904	177	177	177	177	177	177	177	177	177	177	177	177	115
Strip Ratio (Waste/Ore)			2.1	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Processing																
Ore Milled	t ov	3,767	3,761	89 0.55	89 0.55	89 0.55	89	89	89 0.55	89	89	89 0.55	89	89 0.55	89 0.55	89
Cu Grade Au Grade	% oz/t	0.46 0.011		0.55	0.011	0.011	0.55 0.011	0.55	0.011	0.55 0.011	0.55 0.011	0.011	0.55 0.011	0.011	0.011	0.55 0.011
Mo Grade	ppm	214		242.3	242.3	242.3	242.3	242.3	242.3	242.3	242.3	242.3	242.3	242.3	242.3	242.3
Cu Recovery	%	88		89	89	89	89	89	89	89	89	89	89	89	89	
Au Recovery	%	71		71	71	71	71	71	71	71	71	71	71	71	71	71
Mo Recovery	%	88		90	90	90	90	90	90	90	90	90	90	90	90	90
Concentrate Production Cu Au Concentrate																
Cu Au Concentrate Cu Pounds	Mlb.	30,494	29,985	867	867	867	867	867	867	867	867	867	867	867	867	867
Au Ounces	Koz.	30,307	30,152	692	692	692	692	692	692	692	692	692	692	692	692	692
Ag Ounces	Koz.	140,423		1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Rh Kilograms	Kkg	1,158		15	15	15	15	15	15	15	15	15	15	15	15	
Pd Ounces	Koz.	907		12	12	12	12	12	12	12	12	12	12	12	12	12
Mo Concentrate Mo Pounds	Nails	1 420	1,361	39	39	39	39	39	39	39	39	39	39	39	39	39
Revenue	Mlb.	1,420	1,361	39	35	39	39]	39	39	39	39	39	39	39	39	39
Metal Prices	T T								Γ							T
Cu	\$/lb.	2.50		2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Au	\$/oz.	1,050.00		1,050.00	1,050.00		1,050.00	1,050.00	1,050.00	1,050.00		1,050.00		1,050.00	1,050.00	
Mo	\$/lb.	13.50		13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
Ag	\$/oz.	15.00 3,000.00		15.00 3,000.00												
Rh Pd	\$/kg \$/oz.	490.00		490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00
Gross Revenue	¥, UZ.	450.00		-,50.00	-50.00	-,50.00	-,50.00	-,50.00	-,50.00	-,50.00	-,20.00	+50.00	-,50.00	-,50.00	-,50.00	
Cu	\$M		74,961	2,168	2,168	2,168	2,168	2,168	2,168	2,168	2,168	2,168	2,168	2,168	2,168	2,168
Au	\$M		31,660	727	727	727	727	727	727	727	727	727	727	727	727	727
Mo	\$M		18,369	522	522	522	522	522	522	522	522	522	522	522	522	522
Ag	\$M			24	24	24	24	24		24	24	24	24	24	24	
Rh Pd	\$M \$M			40 5		40 5	40 5	40 5								
Total Gross Revenue	\$M	233,908	128,118	3,486	3,486	3,486	3,486	3,486	3,486	3,486	3,486	3,486	3,486	3,486	3,486	3,486
Realization Charges	\$M	-11,089	-10,900	-311	-311	-311	-311	-311	-311	-311	-311	-311	-311	-311	-311	-311
Net Smelter Revenue	\$M	120,197	117,218	3,175	3,175	3,175	3,175	3,175	3,175	3,175	3,175	3,175	3,175	3,175	3,175	3,175
Operating Costs																
Operating Cost	\$M	-96,063	-45,901	-1,180	-1,180	-1,180	-1,180	-1,180	-1,180	-1,180	-1,180	-1,180	-1,180	-1,180	-1,180	
Operating Profit		117,906	71,317	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994	1994
Royalties and Local Production Taxes Tech 4% Pre-Payback, 5% Post-Payback			-3,528	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100	-100
Local Production Taxes (5%)			-4,155	-105	-105	-105	-105	-105	-105	-105	-105	-105	-105	-105	-105	-105
Gross Profit				1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790	1,790
Costs																
Capital Costs																
Mining Process	\$M \$M	-431 -1,058														
Molybdenum Saration	\$M	-84														
Secondary Gold Plant	\$M	-161														
Infrastructure	\$M	-422														
Tailings	\$M	-294														
Pipelines	\$M	-98														
Access Road	\$M	-162														
Port infrastructure Port process	\$M \$M	-155 -87							l							
Power generation	\$M	-534							l							
Indirect costs	\$M	-1,407														
Contingency	\$M	-866														
Sub-Total Capital Costs	\$M	-5,757							ļ			ļ				ļ
Molybdenum Autociave	\$M \$M	-374 121				ļ			ļ			ļ				
Escalation/De-escalation Adjustment Outsourced Infrastructure	\$M \$M	121 1,315							 			 				
Total Capital Costs	\$M	-4,695	-4,695						l			 				
Sustaining Capital Costs																
Open Pit	\$M	-3,286														
Processing	\$M	-230							ļ			ļ				
Infrastructure	\$M \$M	-165 -2,211							ļ							
Waste Management Other	\$M \$M	-2,211														
Molybdenum Autociave	\$M	-144														
Total Sustaining Capital Costs	\$M	-6,140	-6,828	-96	-96	-96	-96	-96	-96	-96	-96	-96	-96	-96	-96	-96
Total Capital Costs			-11,523	-96	-96	-96	-96	-96	-96	-96	-96	-96	-96	-96	-96	-96
Net Cash Flow			52,111	1,694	1,694	1,694	1,694	1,694	1,694		1,694		1,694	1,694	1,694	1,694
Cumulative Cash Flow	<u></u>			31,778	33,473	35,167	36,862	38,556	40,250	41,945	43,639	45,334	47,028	48,722	50,417	52,111
NPV @ 0% DROR NPV @ 5% DROR	\$M \$M	55,278 11,163	52,111 11,311													
NPV @ 5% DROR NPV @ 7% DROR	\$M \$M	11,163 6,129	6,360									-				
NPV @ 8% DROR	\$M	4,510	4,737						 							
NPV @ 10% DROR	\$M	2,308	2,501													
IRR	%	14.2	14.5													
Payback	years	6.2	6.3													
Taxes	1					I			I	1		I			l .	1

Pebble Mine Pro Forma 2011 Preliminary Assessment

25-Year Mine Resource Case

		2011 Ca	lculated															Year														
Description	Units		Total	-4	-3	-2	-1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Production				• 1	- 1	- 1	- 1	- 1	- 1	- 1	- 1	- 1	- 1	· 1	1	- 1	1	1	(1	1		** 1	1	1			1	1	1	
Mining		T			·····				·····	·····				T					T							·····	T				T	
Ore	t		1,989					67	67	67	67	67	73	73	73	73	73	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86
Waste	t		4,422					67	67	67	67	67	95	95	95	95	95	241	241	241	241	241	241	241	241	241	241	241	241	241	241	241
Strip Ratio (Waste/Ore)			2.2					1.0	1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Processing Ore Milled	 	1,990	1,989					67	67	67	67	67	73	73	73	73	73	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86
Cu Grade	1 %	0.38	1,303					0.36	0.36	0.36	0.36	0.36	0.34	0.34	0.34	0.34	0.34	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Au Grade	oz/t	0.012								0.0112	0.0112	0.0112		0.0107	0.0107	0.0107	0.0107	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118				0.0118
Mo Grade	ppm	182						171.1	171.1	171.1	171.1	171.1	158.8	158.8	158.8	158.8	158.8	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5	183.5
Cu Recovery	%	87						82	82	82	82	82	86	86	86	86	86	87	87	87	87	87	87	87	87	87	87	87	87	87	87	87
Au Recovery	%	72						70	70	70	70	70	70	70	70	70	70	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72
Mo Recovery	%	85						79	79	79	79	79	82	82	82	82	82	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
Concentrate Production Cu Au Concentrate	-																															
Cu Au Concentrate Cu Ibs	M lb	12,944	12,637					393	393	393	393	393	427	427	427	427	427	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569
Au Oz	k oz	16,391	16,313					522	522	522	522	522	547	547	547	547	547	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731
Ag Oz	k oz	67,205						862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862
Rh kg	K kg	502						6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Pd Oz	k oz	385						5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Mo Concentrate																																
Mo lbs	Mlb	616	588					18	18	18	18	18	19	19	19	19	19	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
Revenue	, , , , , , , , , , , , , , , , , , , 			·····								γ																				
Metal Prices Cu	\$/#	2.50						2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Au	\$/# \$/oz	1,050.00							.050.00			1,050.00			1,050.00	1,050.00	1,050.00	1,050.00	1,050.00	1,050.00		1.050.00					1.050.00		1,050.00 1			1,050.00
Mo	\$/02	13.50						13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50
Aq	\$/oz	15.00						15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
Rh	\$/kg	3,000.00				-						3,000.00			3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00												3,000.00
Pd	\$/oz	490.00						490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00
Gross Revenue																																
Cu	\$ M		31,592					983	983	983	983	983	1,067	1,067	1,067	1,067	1,067	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423
Au	\$ M		17,129					548	548	548	548	548	574	574	574	574	574	768	768	768	768	768	768	768	768	768	768	768	768	768	768	768
Mo	\$ M		7,935					243	243	243	243	243	257	257	257	257	257	362	362	362	362	362	362	362	362	362	362	362	362	362	362	362
Ag	\$ M							12	12	12	12	12	12	12	12	12	12	12	12	12	12		12	12	12	12	12	12	12	12	12	12
Rh Pd	\$ M							17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Total Gross Revenue	\$ M	54,637	57,435					1,806	1,806	1,806	1,806	1,806	1,929	1,929	1,929	1,929	1,929	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584
Realization Charges	\$ M	-4,752	-4,671					-145	-145	-145	-145	-145	-156	-156	-156	-156	-156	-211	-211	-211	-211	-211	-211	-211	-211	-211	-211	-211	-211	-211	-211	-211
Net Smelter Revenue	\$ M	54,637	52,764					1,661	1,661	1,661	1,661	1,661	1,773	1,773	1,773	1,773	1,773	2,373	2,373	2,373	2,373	2,373	2,373		2,373	2,373	2,373	2,373	2,373	2,373	2,373	2,373
Operating Costs				l												L					· · · · · ·			L				L				
Operating Cost	\$ M	-22,208	-22,295				-269	-668	-668	-668	-668	-668	-723	-723	-723	-723	-723	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005
Operating Profit		117,906	30,469				-269	993	993	993	993	993	1050	1050	1050	1050	1050	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368
Royalties and Local Production Taxes			1 107																													
Tech 4% pre-payback, 5% post-paybac	K		-1,487 -1,977			E0		-40	-40 -53	-40	-40 -53	-40	-53 -58	-53 -58	-53 -58	-53 -58	-53 -58	-68 -79	-68	-68 -79	-68 -79	-68 -79	-68 -79	-68 -79								
Local Production Taxes (5%) Gross Profit	-		-1,977	-59 -59	-59 -59	-59 -59	-59 -328	-53 900	900	-53 900	900	-53 900	940	940	940	940	940	1,221	1,221	1,221	1,221	1,221	1,221	1,221	1,221	1,221	-79 1,221	1,221	1,221	1,221	1,221	1,221
Costs																																
Capital Costs				I		I						T						I		T												
Mining	\$ M	-431		-108	-108	-108	-108																									
Process	\$ M	-1,058		-265	-265	-265	-265																									
Molybdenum Saration	\$ M	-84		-21	-21	-21	-21																									
Secondary Gold Plant Infrastructure	\$ M	-161 -422		-40 -106	-40 -106	-40	-40	l l	1										1		1			I								
Tailings	\$ M	-294			-1001		106																									
Pipelines				_7/1	-7/	-106 -74	-106 -74																									
Access Road	3 101			-74 -24	-74 -24	-74	-74																									
, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	\$ M	-98 -162		-74 -24 -41	-74 -24 -41	-74 -24																										
Port infrastructure		-98		-24	-24	-74 -24	-74 -24																									
Port infrastructure Port process	\$ M \$ M \$ M	-98 -162 -155 -87		-24 -41 -39 -22	-24 -41 -39 -22	-74 -24 -41 -39 -22	-74 -24 -41 -39 -22																									
Port infrastructure Port process Power generation	\$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534		-24 -41 -39 -22 -134	-24 -41 -39 -22 -134	-74 -24 -41 -39 -22 -134	-74 -24 -41 -39 -22 -134																									
Port infrastructure Port process Power generation Indirect costs	\$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407		-24 -41 -39 -22 -134 -352	-24 -41 -39 -22 -134 -352	-74 -24 -41 -39 -22 -134 -352	-74 -24 -41 -39 -22 -134 -352																									
Port infrastructure Port process Power generation Indirect costs Contingency	\$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866		-24 -41 -39 -22 -134 -352 -216	-24 -41 -39 -22 -134 -352 -216	-74 -24 -41 -39 -22 -134 -352 -216	-74 -24 -41 -39 -22 -134 -352 -216																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757		-24 -41 -39 -22 -134 -352 -216 -1,439	-24 -41 -39 -22 -134 -352 -216 -1,439	-74 -24 -41 -39 -22 -134 -352 -216 -1,439	-74 -24 -41 -39 -22 -134 -352 -216 -1,439																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave	\$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757		-24 -41 -39 -22 -134 -352 -216 -1,439 -94	-24 -41 -39 -22 -134 -352 -216 -1,439 -94	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374		-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave	\$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757	-4,695	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-24 -41 -39 -22 -134 -352 -216 -1,439 -94	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 1,315	-4,695	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 121 1,315	-4,695	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695	-4,695	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -566 -5,757 -374 121 1,315 -4,695 -2,047 -146 -12	-4,695	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management	\$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -2,047 -146 -12 -846	-4,695	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure	\$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -2,047 -146 -12 -846 -70	-4,695	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329																									
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave	\$ M	-98 -162 -155 -87 -534 -1,407 -886 -5,757 -374 121 -1,315 -4,695 -2,047 -146 -12 -846 -83		-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329			652		652								3.17		3.17		317		317	317				317	
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs	\$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -2,047 -146 -12 -846 -70	-4,107	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65.2	-65.2	-65.2	-65.2	-65.2	-104	-104	-104	-104	-104	-217	-217	-217			-217		-217	-217	-217	-217	-217	217	-217	-217
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Capital Costs Total Capital Costs	\$ M	-98 -162 -155 -87 -534 -1,407 -886 -5,757 -374 121 -1,315 -4,695 -2,047 -146 -12 -846 -83	-4,107 -8,802	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,174 -1,174	-65	-65	-65	-65	-65	-104	-104	-104	-104	-104	-217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-217	-217
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs	\$ M	-98 -162 -155 -87 -534 -1,407 -886 -5,757 -374 121 -1,315 -4,695 -2,047 -146 -12 -846 -83	-4,107	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,174 -1,174 -1,232	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65 835	-65 835	-65 835	-65 835	-65 835	-104 836	-104 836	-104 836	-104 836	-104 836	-217 1,003														
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow	\$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -315 -4,695 -2,047 -146 -12 -846 -70 -83 -3,204	-4,107 -8,802 18,203	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -300 -1,174 -1,174 -1,232	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65 835	-65	-65	-65	-65	-104	-104	-104	-104	-104	-217	-217	-217	-217 1,003	-217 1,003	-217	-217 1,003	-217	-217 1,003	-217 1,003	-217 1,003	-217 1,003	-217 1,003	-217 1,003	-217
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR	\$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -2,047 -146 -12 -846 -70 -846 -70 -83 -3,204 -3,204	-4,107 -8,802 18,203	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,174 -1,174 -1,232	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65 835	-65 835	-65 835	-65 835	-65 835	-104 836	-104 836	-104 836	-104 836	-104 836	-217 1,003														
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 5% DROR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -2,047 -146 -70 -83 -3,204 -3,204 -3,204 -3,6,363	-4,107 -8,802 18,203	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,174 -1,174 -1,232	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65 835	-65 835	-65 835	-65 835	-65 835	-104 836	-104 836	-104 836	-104 836	-104 836	-217 1,003														
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR	\$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -2,047 -146 -12 -846 -70 -846 -70 -83 -3,204 -3,204	-4,107 -8,802 18,203 18,203 5,975	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174 -1,174 -1,174 -1,232 -1,232	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,174 -1,174 -1,232	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65 835	-65 835	-65 835	-65 835	-65 835	-104 836	-104 836	-104 836	-104 836	-104 836	-217 1,003														
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 5% DROR NPV @ 7% DROR	\$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1315 -4,695 -2,047 -146 -12 -846 -70 -83 -3,204 -3,204 -3,204 -3,204 -3,3837	-4,107 -8,802 18,203 18,203 5,975 3,640	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174 -1,174 -1,174 -1,232 -1,232	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,174 -1,174 -1,232	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65 835	-65 835	-65 835	-65 835	-65 835	-104 836	-104 836	-104 836	-104 836	-104 836	-217 1,003														
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Sustaining Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 9% DROR NPV @ 78 DROR NPV @ 78 DROR NPV @ 78 DROR NPV @ 8% DROR NPV @ 10% DROR IRR	\$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -2,047 -146 -70 -83 -3,204 -3,204 -3,204 -3,204 -3,204 -3,3,387 -2,901 -1,485 -3,34	-4,107 -8,802 18,203 18,203 5,975 3,640 2,764 1,425 13,4	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174 -1,174 -1,232 -1,232	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,174 -1,174 -1,232	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65 835	-65 835	-65 835	-65 835	-65 835	-104 836	-104 836	-104 836	-104 836	-104 836	-217 1,003														
Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustmen Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 5% DROR NPV @ 5% DROR NPV @ 8% DROR NPV @ 8% DROR NPV @ 8% DROR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-98 -162 -155 -87 -534 -1,407 -866 -5,757 -374 -121 -1,315 -4,695 -2,047 -146 -12 -846 -70 -883 -3,204 -3,204 -3,204 -3,204 -3,204 -3,204 -3,204 -1,485	-4,107 -8,802 18,203 18,203 5,975 3,640 2,764 1,425	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -30 329 -1,174 -1,174 -1,232 -1,232	-24 -41 -39 -22 -134 -352 -216 -1,439 -94 -329 -1,174 -1,174	-74 -24 -41 -39 -39 -22 -134 -352 -216 -1,439 -94 -30 -329 -1,174 -1,174 -1,232	-74 -24 -41 -39 -22 -134 -352 -216 -1,439 -94 30 329 -1,174	-65 835	-65 835	-65 835	-65 835	-65 835	-104 836	-104 836	-104 836	-104 836	-104 836	-217 1,003														

Proposed Pebble Project DEIS Technical Review of Economic Feasibility 25-Year Mine Resource Case Technical Memorandum No. 5, Attachment 5A-2c Page 1 of 1

2011 Preliminary Assessment

25-Year Mine Resource Case, Sensitivity Case 1 - 100% Increase Captial Costs

25-Teal Wille Resource Case, Sensitivity		2011	Calculated							888888888888888888888888888888888888888							Vanu													
Description	Units	Actual	Total	-4	-3 -2	-1	1	2	3	4	5	6	7	8	9	10	Year 11	12	13	14	15	16	17	18	19	20	21	22	23	24 25
Production	-																													
Mining Ore	t		1,989				67	67	67	67	67	73	73	73	73	73	86	86	86	86	86	86	86	86	86	86	86	86	86	86 8
Waste	t		4,422				67	67	67	-		95	95	95	95	95	241	241	241	241	241	241	241	241	241			241	241	241 24
Strip Ratio (Waste/Ore)			2.2				1.0	1.0	1.0	1.0	1.0	1.3	1.3	1.3	1.3	1.3	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8 2.
Processing Ore Milled	t	1,990	1,989				67	67	67	67	67	73	73	73	73	73	86	86	86	86	86	86	86	86	86	86	86	86	86	86 8
Cu Grade	%	0.38	1,505				0.36	0.36	0.36	0.36	0.36	0.34	0.34	0.34	0.34	0.34	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38			0.38	0.38	0.38 0.3
Au Grade	oz/t	0.012					0.0112	0.0112				0.0107	0.0107	0.0107	0.0107	0.0107	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118	0.0118				0.0118	0.0118	0.0118 0.011
Mo Grade Cu Recovery	ppm %	182					171.1 82	171.1 82	171.1 82	171.1 82	171.1 82	158.8 86	158.8	158.8 86	158.8 86	158.8	183.5	183.5 87	183.5 87	183.5 87	183.5	183.5 87	183.5 87	183.5 87	183.5 87			183.5 87	183.5 87	183.5 183. 87 8
Au Recovery	%	72					70	70	70	ļ	 	70	86 70	70	70	86 70	72	72	72	72	72	72	72	72				72	72	72 7
Mo Recovery	%	85					79	79	79	79	79	82	82	82	82	82	85	85	85	85	85	85	85	85				85	85	85 8
Concentrate Production																														
Cu Au Concentrate Cu lbs	Mib	12,944	12,637				393	393	393	393	393	427	427	427	427	427	569	569	569	569	569	569	569	569	569	569	569	569	569	569 56
Au Oz	k oz	16,391	16,313				522	522	522	522	522	547	547	547	547	547	731	731	731	731	731	731	731	731	731			731	731	731 73
Ag Oz	k oz	67,205					862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862	862				862	862	862 86
Rh kg Pd Oz	K kg k oz	502 385					6	6	6 5	6	6	6	6	6	6	6	6	6	6 5	6	6	6	6 5	6	5		+	6	5	5
Mo Concentrate	K 02	363					2	2	2	3	2	2		2	2	2	2		2	2	2	2	2	2	2		7	2	2	3
Mo lbs	M lb	616	588				18	18	18	18	18	19	19	19	19	19	27	27	27	27	27	27	27	27	27	27	27	27	27	27 2
Revenue	,		T																							Υ				
Metal Prices Cu	\$/#	2.50					2.50	2 50	250	2.50	2.50	2.50	2.50	2 50	250	2.50	2.50	250	250	2 50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50 2.5
Au	\$/# \$/oz	1,050.00					1,050.00	2.50 1,050.00	2.50 1,050.00			2.50 1,050.00	1,050.00	2.50 1,050.00	1,050.00	1,050.00	1,050.00	2.50 1,050.00	2.50 1,050.00	2.50 1,050.00	1,050.00	1,050.00	1,050.00	1,050.00					1,050.00	1,050.00 1,050.0
Мо	\$/#	13.50					13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50	13.50 13.5
Ag	\$/oz	15.00					15.00	15.00	15.00	 	 	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00			15.00	15.00	15.00 15.0
Rh Pd	\$/kg \$/oz	3,000.00 490.00		-		-	3,000.00 490.00	3,000.00 490.00	3,000.00 490.00	3,000.00 490.00		3,000.00 490.00	3,000.00 490.00	3,000.00 490.00	3,000.00 490.00	3,000.00 490.00	3,000.00 3 490.00	3,000.00 490.00		3,000.00 490.00	3,000.00 490.00	3,000.00 490.00	3,000.00 3,000.0 490.00 490.0							
Gross Revenue	\$702	430.00					430.00	430.00	430.00	430.00	430.00	450.00	450.00	490.00	490.00	430.00	490.00	430.00	450.00	430.00	450.00	430.00	490.00	450.00	490.00	490.00	490.00	490.00	430.00	490.00 490.0
Cu	\$ M		31,592				983	983	983			1,067	1,067	1,067	1,067	1,067	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423	1,423 1,42
Au	\$ M		17,129				548	548	548	548		574	574	574	574	574	768	768	768	768	768	768	768	768	768			768	768	768 76
Mo Ag	\$ M		7,935				243 12	243 12	243 12	 	243 12	257 12	257 12	257 12	257 12	257 12	362 12	362 12	362 12	362 12	362 12	362 12	362 12	362 12				362 12	362 12	362 36 12 1:
Rh	\$ M						17		17	17		17	17	17	17	17	17	17	17	17	17	17	17	17				17	17	17 1
Pd	\$ M						2	2	2		2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	. 2	1	2	2	2
Total Gross Revenue	\$ M	54,637	57,435				1,806 -145	1,806	1,806			1,929	1,929	1,929	1,929	1,929	2,584	2,584	2,584	2,584	2,584	2,584	2,584	2,584			+	2,584	2,584	2,584 2,58
Realization Charges Net Smelter Revenue	\$ M	-4,752 54,637	-4,671 52,764				1,661	-145 1,661	-145 1,661	-145 1,661		-156 1,773	-156 1,773	-156 1,773	-156 1,773	-156 1,773	-211 2,373	-211 2,373	-211 2,373	-211 2,373	-211 2,373	-211 2,373	-211 2,373	-211 2,373	-211 2,373			-211 2,373	-211 2,373	-211 -21 2,373 2,37
Operating Costs	1				'												,										,	,		
Operating Cost	\$ M	-22,208	-22,295			-269		-668	-668	-668		-723	-723	-723	-723	-723	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005	-1,005			-1,005	-1,005	-1,005 -1,00
Operating Profit							993	993	993	993	993	1050	1050	1050	1050	1050	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368	1368 136
<u> </u>		117,906	30,469			-269	333							1	1				T								+			
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback		117,906	-1,487			-209	-40		-40	-40	-40	-53	-53	-53	-53	-53	-68	-68	-68	-68	-68	-68	-68	-68	-68	-68		-68	-68	-68 -6
Royalties and Local Production Taxes		117,906		-117	-117 -1	17 -117	-40 -53			-40 -53		-58	-53 -58	-58	-58	-53 -58	-68 -79	-68 -79	-68 -79	-79	-79	-68 -79	-68 -79	-68 -79	-68 -79	-79	-68 -79	-68 -79	-68 -79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit		117,900	-1,487				-40 -53	-40	-40		-53															-79	-68 -79			
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs		117,906	-1,487			17 -117	-40 -53	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit	\$ M	-431	-1,487	-117		17 -117 17 -386	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process	\$ M	-431 -1,058	-1,487 -2,212 -861.6 -2116.4	-117 -215 -529	-117 -1 -215 -2 -529 -5	17 -117 17 -386 15 -215 29 -529	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration	\$ M \$ M	-431 -1,058	-1,487 -2,212 -861.6 -2116.4 -167	-117 -215 -529 -42	-117 -1 -215 -2 -529 -5 -42 -	17 -117 17 -386 15 -215 29 -529 42 -42	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process	\$ M	-431 -1,058	-1,487 -2,212 -861.6 -2116.4	-117 -215 -529 -42 -80	-117 -1 -215 -2 -529 -5 -42 -	17 -117 17 -386 15 -215 29 -529 42 -42 80 -80	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant	\$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588	-117 -215 -529 -42 -80 -211 -147	-117 -1 -215 -2 -529 -5 -42 - -80 - -211 -2 -147 -1	17 -117 17 -386 15 -215 29 -529 42 -42 80 -80 11 -211 47 -147	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines	\$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294 -98	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195	-117 -215 -529 -42 -80 -211 -147 -49	-117 -1 -215 -2 -529 -5 -42 -80 -211 -2 -147 -1 -49	17 -117 17 -386 15 -215 29 -529 42 -42 80 -80 11 -211 47 -147 49 -49	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road	\$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294 -98	-861.6 -2116.4 -167 -321 -844 -188 -195 -324	-117 -215 -529 -42 -80 -211 -147 -49 -81	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -4981	17 -117 17 -386 15 -215 29 -529 42 -42 80 -80 11 -211 47 -147 49 -49 81 -81	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294 -98 -162 -155 -87	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -4981 -7744	17 -117 17 -386 15 -215 29 -529 42 -42 80 -80 11 -211 11 -1147 49 -49 81 -81 -77 -77 44 -44	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -87	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -1068.2	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2	1771177 177 -386 175 -215 155 -215 29 -529 42 -42 480 80 80 80 111 -211 47 -147 49 -49 81 81 81 81 777 -777 444 444 444 667 -267 -267	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -644 -161 -4222 -162 -162 -155 -87 -534 -1,407	-1,487 -2,212 -861.6 -2116.4 -167 -3211 -844 -588 -195 -324 -309 -174.2 -2813.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7	17 -117 -386 15 -215 29 -529 42 -42 80 -80 11 -211 47 -147 49 -49 81 81 81 81 81 777 -777 444 -44 67 -267 03 -703	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -87	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -1068.2	-117 -215 -529 -42 -40 -211 -147 -49 -81 -77 -44 -267 -703 -433	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7	177 -1177 -3866 115 -215 29 -529 42 42 42 860 -80 11 -2111 47 -147 49 49 49 81 -81 777 -77 44 -44 44 -44 677 -267 03 -703 33 -433	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -3,74	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -2813.6 -1731.4 -17513.4 -748.4	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,88 -187 -1	177117 177386 155215 299529 4242 8080 11211 47147 4949 8181 8181 67267 03 -703 33433 782878 87187	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -4222 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -3747 121	-861.6 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61	-117 -1 -215 -2 -529 -5 -4280 -211 -2 -147 -1 -4981 -7744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1	17 -117 -386 15 -215 29 -529 42 42 42 880 -80 11 -211 47 -147 49 -49 81 81 -81 81 -81 67 -267 03 -703 33 -433 78 -2.878 87 -187 61 61 61 61	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294 -162 -155 -87 -534 -1,407 -866 -5,757 -3,74	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4 -242.2 2630	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61 -658	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 658 66	177 -1177 -3866 155 -215 -29 -529 42 -42 460 -80 111 -2111 477 -1477 49 -49 81 -81 777 -777 444 -444 676 -267 03 -703 33 -433 -433 78 -2,878 87 -187 61 61 61 58 658	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -294 -99 -162 -1555 -87 -5,757 -374 -2,757 -374 -1,315	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4 -242.2 2630	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61 -658	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 658 66	177 -1177 -3866 155 -215 -29 -529 42 -42 460 -80 111 -2111 477 -1477 49 -49 81 -81 777 -777 444 -444 676 -267 03 -703 33 -433 -433 78 -2,878 87 -187 61 61 61 58 658	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -294 -98 -162 -155 -87 -5,757 -374 121 1,315 -4,695	-861.6 -2116.4 -167 -3211 -844 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4 242.2 2630 -9389.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61 -658	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 658 66	177 -1177 -3866 155 -215 -29 -529 42 -42 460 -80 111 -2111 477 -1477 49 -49 81 -81 777 -777 444 -444 676 -267 03 -703 33 -433 -433 78 -2,878 87 -187 61 61 61 58 658	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-scalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit Processing	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -4222 -294 -162 -1555 -87 -5,757 -374 121 1,315 -4,695	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4 -242.2 -2630 -9389.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61 -658	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 658 66	177 -1177 -3866 155 -215 -29 -529 42 -42 460 -80 111 -2111 477 -1477 49 -49 81 -81 777 -777 444 -444 676 -267 03 -703 33 -433 -433 78 -2,878 87 -187 61 61 61 58 658	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -294 -98 -162 -155 -87 -5,757 -374 121 1,315 -4,695	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4 242.2 2630 -9389.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61 -658	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 658 66	177 -1177 -3866 155 -215 -29 -529 42 -42 460 -80 111 -2111 477 -1477 49 -49 81 -81 777 -777 444 -444 676 -267 03 -703 33 -433 -433 78 -2,878 87 -187 61 61 61 58 658	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1.058 -84 -161 -294 -99 -162 -1555 -87 -5,757 -374 -1,407 -1,315 -4,695 -2,047 -146 -12 -2,047 -146 -12 -2,047 -146 -12 -2,047 -146 -2,047 -146 -12 -146 -12 -146 -146 -146 -146 -146 -146 -146 -146	-1,487 -2,212 -861.6 -2116.4 -167 -321 -844 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4 -242.2 -2630 -9389.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61 -658	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 658 66	177 -1177 -3866 155 -215 -29 -529 42 -42 460 -80 111 -2111 477 -1477 49 -49 81 -81 777 -777 444 -444 676 -267 03 -703 33 -433 -433 78 -2,878 87 -187 61 61 61 58 658	-40 -53 900	-40 -53	-40 -53	-53	-53	-58	-58	-58	-58	-58	-79	-79	-79	-79	-79	-79	-79	-79	-79	-79	-68 -79	-79	-79	-79 -7 ⁻
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Molybdenum Autoclave	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -98 -162 -294 -1,407 -5,757 -374 -1,407 -4,695 -2,047 -1,4695 -2,047 -1,4695 -2,047 -1,4695 -1,46	-1,487 -2,212 -861.6 -2116.4 -167 -321 -8444 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4 -242.2 -2630 -9389.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61 -658	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 658 66	177 -1177 -3866 155 -215 -29 -529 42 -42 460 -80 111 -2111 477 -1477 49 -49 81 -81 777 -777 444 -444 676 -267 03 -703 33 -433 -433 78 -2,878 87 -187 61 61 61 58 658	-40 -53 900	-40 -53 900	-40 -53 900	-53 900	-53 900	-58 940	-58 940	-58 940	-58 940	-58 940	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79	79 1,221	-68 -79 1,221	-79 1,221	-79 1,221	-79 -7 1,221 1,22
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Objection Autoclave Total Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1.058 -84 -161 -294 -99 -162 -1555 -87 -5,757 -374 -1,407 -1,315 -4,695 -2,047 -146 -12 -2,047 -146 -12 -2,047 -146 -12 -2,047 -146 -2,047 -146 -12 -146 -12 -146 -146 -146 -146 -146 -146 -146 -146	-1,487 -2,212 -861.6 -2116.4 -167 -3211 -844 -588 -195 -324 -309 -174.2 -2813.6 -1731.4 -11513.4 -748.4 -242.2 -2630 -9389.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2.878 -187 -61 -658 -2.347 -	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -4981 -7744267 -2 -703 -7 -433 -4 -2,878 -2,8 -61 658 6 -2,347 -2,3	177117 177386 155215 299529 4242 800800 111211 477147 49949 81881 81881 817777 44444 67267 603703 333433 333433 357187 6161 6161 6161 658658 658658 6472,347	-40 -53 900	-40 -53 900	-40 -53 900	-53 900	-53 900	-58 940	-58 940	-58 940	-58 940	-58 940	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-68 -79 1.221	-79 1,221	-79 1,221	-79 -7 1,221 1,22
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Waste Management Infrastructure Molybdenum Autoclave	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -98 -162 -294 -1,407 -5,757 -374 -1,407 -4,695 -2,047 -1,4695 -2,047 -1,4695 -2,047 -1,4695 -1,46	-1,487 -2,212 -861.6 -2116.4 -167 -321 -8444 -588 -195 -324 -309 -174.2 -1068.2 -2813.6 -1731.4 -11513.4 -748.4 -242.2 -2630 -9389.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 61 658 -2,347 -	-117 -1 -215 -2 -529 -5 -4280211 -2 -147 -1 -49817744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 658 66	17 -117 18 -215 19 -529 42 -42 80 -80 11 -211 47 -147 49 -49 81 -81 77 -77 744 -44 667 -267 03 -703 33 -433 78 -2,878 87 -187 61 61 61 61 65 658 47 -2,347	-40 -53 900	-40 -53 900	-40 -53 900	-53 900	-53 900 -65.2 -65.2	-58 940	-58 940	-58 940	-58 940	-58 940	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-68 -79 1,221	-79 1,221	-79 1,221	-79 -7 1,221 1,22
Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Waste Management Infrastructure Molybdenum Autoclave Total Capital Costs Open Pit Processing Infrastructure Waste Management Infrastructure Total Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-431 -1,058 -84 -161 -422 -294 -162 -152 -1555 -87 -5,757 -374 -1,407 -4,695 -2,047 -1,4695 -2,047 -1,4695 -1,204	-1,487 -2,212 -861.6 -2116.4 -167 -3211 -844 -588 -195 -324 -309 -174.2 -2813.6 -1331.4 -1748.4 -748.4 -242.2 -2630 -9389.6	-117 -215 -529 -42 -80 -211 -147 -49 -81 -77 -44 -267 -703 -433 -2,878 -187 -61 -658 -2,347 -2,465 -2,465 -2,465 -2,465	-117 -1 -215 -2 -529 -5 -4280 -211 -2 -147 -1 -4981 -7744267 -2 -703 -7 -433 -4 -2,878 -2,8 -187 -1 61 658 6 -2,347 -2,3	177 -1177 -3866 115 -215 -29 -529 42 -42 860 -80 111 -2111 47 -147 49 -49 81 -81 777 -777 44 -44 -44 67 -267 03 -703 33 -433 -433 78 -2,878 87 -187 61 61 61 58 658 47 -2,347	-40 -53 900	-40 -53 900 -65.2 -65.2 -65.8	-40 -53 900 -65.2 -65.2 -65.8	-65.2 -65.2 -65.8	-53 900 -65.2 -65.2 835	-58 940	-58 940	-58 940	-58 940	-58 940 -104 -104	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-79 1,221	-68 -79 1,221	-79 1.221	-79 1,221	-79 -7 1,221 1,22
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Proposed Pebble Project DEIS Technical Review of Economic Feasibility 25-Year Mine Resource Case, Sensitivity Case 1 Technical Memorandum No. 5, Attachment 5A-2d Page 1 of 1

2011 Preliminary Assessment

39-Year Mine Resource Case, Sensitivity Case 2 - Double Rate of Production

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	Au \$	\$ M			548	3 548	8 54	8 548		574	574	574		574	768 76								768								7 72	7 727		727 72
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Many 1, 10	Local Production Taxes (5%)		-6,710 -59		-59 -58	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Proof: 14 M. 1988 1989 198	Local Production Taxes (5%)		-6,710 -59		-59 -58	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Modelson Services SM	Local Production Taxes (5%) Gross Profit Costs Capital Costs		-6,710 -59 -59	-59 -59 -3	-59 -58 328 991	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Second field Port	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining		-6,710 -59 -59 -108	-59 -59 -3 -108 -108 -	-59 -58 328 991 108	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Mistandarde	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining \$ Process \$	\$ M -1,058	-6,710 -59 -59 -108 -265	-59 -59 -3 -108 -108 -3 -265 -265 -2	-59 -58 328 991 108 265	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Triling	Local Production Taxes (5%) Gross Profit	\$ M -1,058 \$ M -84	-6,710 -59 -59 -59 -108 -265 -21	-108 -108 - -265 -265 -2 -21 -21	-59 -58 328 991 108 265 -21	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
According Cardinal Multiplication (As and Multiplication Control of Mu	Local Production Taxes (5%) Gross Profit	\$ M -1,058 \$ M -84 \$ M -161	-6,710 -59 -59 -59 -108 -265 -21 -40	-59 -59 -6 -108 -108 -7 -265 -265 -2 -21 -21 -40 -40	-59 -58 328 991 108 265 -21 -40	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Post process	Local Production Taxes (5%) Gross Profit Costs	\$ M -1,058 \$ M -84 \$ M -161 \$ M -422	-6,710 -59 -59 -108 -265 -21 -40 -106	-59 -59 -5 -108 -108 - -265 -265 -2 -21 -21 -40 -40 - -106 -106 -	-59 -58 328 991 	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Policy P	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings	\$ M -1,058 \$ M -84 \$ M -161 \$ M -422 \$ M -294	-6,710 -59 -59 -108 -265 -21 -40 -74	-59 -59 -3 -108 -108 -3 -265 -265 -2 -21 -21 -40 -40 -106 -106 -74 -74	-59 -58 328 991 	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Processor SM SM SM SM SM SM SM S	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road	\$ M -1,058 \$ M -84 \$ M -161 \$ M -422 \$ M -294 \$ M -98 \$ M -162	-6,710 -59 -59 -59 -108 -265 -211 -40 -106 -74 -24 -41	-59 -59 -3 -108 -108 -3 -265 -265 -4 -21 -21 -40 -40 -106 -106 -7 -74 -74 -74 -24 -24 -41 -41	-59 -58 328 991 108 265 -21 -40 106 -74 -24 -41	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Figure 1 Figure 2 Figure 3	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure	\$ M -1,058 \$ M -84 \$ M -161 \$ M -422 \$ M -294 \$ M -98 \$ M -162 \$ M -155	-6,710 -59 -59 -108 -265 -21 -40 -106 -74 -24 -41 -39	-108 -108 -108 -108 -265 -265 -26 -21 -21 -40 -40 -106 -106 -74 -74 -24 -24 -41 -41 -39 -39 -39	-59 -58 328 991 108 -65 -21 -40 106 -74 -44 -39	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Extension SM 586 - 256 216 2	Local Production Taxes (5%)	\$ M -1,058 \$ M -84 \$ M -161 \$ M -422 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -87	-6,710 -59 -59 -59 -59 -108 -265 -211 -40 -106 -74 -24 -41 -39 -22	-59 -59 -3 -108 -108 -3 -265 -265 -2 -21 -21 -40 -40 -106 -106 -74 -74 -24 -24 -41 -41 -39 -39 -39 -22 -22	-59 -58 328 991 108 -265 -21 -40 106 -74 -24 -41 -39 -22	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Sub-Treat Capital Cests	Local Production Taxes (5%) Gross Profit Costs	\$ M	-6,710 -59 -59 -59 -59 -108 -265 -211 -40 -106 -74 -24 -41 -39 -22 -134	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -40 -40 -106 -106 -7 -74 -74 -24 -24 -41 -41 -39 -39 -39 -22 -22 -134 -134 -7	-59 -58 -58 991 	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Moly-de-man Autoburde	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs	\$ M -1,058 \$ M -84 \$ M -161 \$ M -422 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -87 \$ M -87 \$ M -87	-6,710 -59 -59 -59 -59 -59 -708 -708 -265 -265 -21 -40 -706 -774 -24 -41 -39 -22 -134 -352	-108 -108 -108 -108 -108 -108 -108 -108	-59 -58 991 108 108 108 108 108 109 109 109 109 109 109 109 109	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Outsourced Infrostructure M 1315 329 32	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Seration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -5 -108 -108 -7 -265 -265 -2 -21 -21 -40 -40 -74 -74 -74 -24 -24 -41 -41 -39 -39 -22 -22 -134 -134 -7 -352 -352 -352 -216 -216 -216 -216	-59 -56 528 991 -50 -50 -50 -50 -50 -50 -50 -50	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Total Casts SM 4.695 1,714 1,716 1,	Local Production Taxes (5%) Gross Profit Costs	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -5 -108 -108265 -265 -2 -21 -21 -40 -40 -106 -106 -7 -74 -74 -24 -24 -41 -41 -41 -39 -39 -39 -22 -22 -134 -134 -352 -352 -352 -352 -352 -314 -339 -14	-59 -58 -58 -58 -58 -58 -58 -58 -58 -58 -58	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
SWEATHING CAPABLE CASTS Open R	Local Production Taxes (5%) Gross Profit	\$ M -1,058 \$ M -84 \$ M -161 \$ M -422 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -87 \$ M -534 \$ M -5,757 \$ M -5,757 \$ M -374 \$ M -374 \$ M -374	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -4 -21 -21 -1 -40 -40 -10674 -74 -4 -24 -24 -41 -41 -41 -39 -39 -39 -22 -22 -134 -134 -3 -352 -352 -3 -216 -216 -4 -1,439 -1,439 -1,439 -94 -94 -30 -30 -30	-59 -58 -58 -58 -58 -58 -58 -58 -58 -58 -58	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Company S.M. 7-725	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Seration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -74 -74 -74 -24 -24 -41 -41 -39 -39 -22 -22 -134 -134 -352 -352 -352 -352 -352 -352 -352 -352	-59 -58 228 991 108 08	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Processing SM SH	Local Production Taxes (5%) Gross Profit Cests Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -41 -39 -39 -22 -22 -134 -134 -3 -352 -352 -3 -216 -216 -216 -3 -1,439 -1,439 -1,439 -94 -94 -94 -94 -30 -30 -30 -329 -329 -3	-59 -58 228 991 108 08	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Figure SM 165 SM 175	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining	\$ M -1,058 \$ M -84 \$ M -161 \$ M -422 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -155 \$ M -534 \$ M -5,34 \$ M -5,757 \$ M -374 \$ M 121 \$ M -374 \$ M -4,695	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -41 -39 -39 -22 -22 -134 -134 -3 -352 -352 -3 -216 -216 -216 -3 -1,439 -1,439 -1,439 -94 -94 -94 -94 -30 -30 -30 -329 -329 -3	-59 -58 228 991 108 08	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Waste Management	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Seration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Ptt	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -41 -39 -39 -22 -22 -134 -134 -3 -352 -352 -3 -216 -216 -216 -3 -1,439 -1,439 -1,439 -94 -94 -94 -94 -30 -30 -30 -329 -329 -3	-59 -58 228 991 108 08	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Other S M 180	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -41 -39 -39 -22 -22 -134 -134 -3 -352 -352 -3 -216 -216 -216 -3 -1,439 -1,439 -1,439 -94 -94 -94 -94 -30 -30 -30 -329 -329 -3	-59 -58 228 991 108 08	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Molybedenum Autoclave \$ M -276	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -41 -39 -39 -22 -22 -134 -134 -3 -352 -352 -3 -216 -216 -216 -3 -1,439 -1,439 -1,439 -94 -94 -94 -94 -30 -30 -30 -329 -329 -3	-59 -58 228 991 108 08	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Total Sustaining Capital Costs \$ M \ \ \frac{11,725}{11,726} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Seration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Sustaining Capital Costs Open Pit Processing Infrastructure	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -41 -39 -39 -22 -22 -134 -134 -3 -352 -352 -3 -216 -216 -216 -3 -1,439 -1,439 -1,439 -94 -94 -94 -94 -30 -30 -30 -329 -329 -3	-59 -58 228 991 108 08	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Net Cash Flow	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -41 -39 -39 -22 -22 -134 -134 -3 -352 -352 -3 -216 -216 -216 -3 -1,439 -1,439 -1,439 -94 -94 -94 -94 -30 -30 -30 -329 -329 -3	-59 -58 228 991 108 08	3 -58	8 -5	8 -58	-58	-63	-63	-63	-63	-63	-84 -8	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-84	-140	-108	3 -108	B -108	-108	-108 -10
Cumulative Cash Flow -1,232	Local Production Taxes (5%) Costs Capital Costs Mining Process Molybdenum Seration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Sustaining Capital Costs Waste Management Other Waste Management Other Molybdenum Autoclave Sustaining Capital Costs Sustaining Capital Costs	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -40 -40 -106 -74 -74 -24 -24 -41 -41 -39 -39 -22 -22 -134 -134 -352 -352 -352 -362 -1434 -1439 -1,439 -	-559 -58 -528 991 -58 -59 -58 -59 -58 -59 -58 -59 -58 -58 -59 -58 -58 -58 -58 -58 -58 -58 -58 -58 -58	991	2 -65	99'	-58 991	-63 1,030	-63 1,030	-63 1,030	-63 1,030	-63 1,030 1	-84 -8 310 1,313	1 -84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-140 1,662	-108 1,845	8 -10(5 1,84*)	5 1.845 5 1.845	-108 1,845	-108 -10 1,845 1,8
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NPV @ 7% DROR	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tallings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Sustaining Capital Costs Sustaining Capital Costs Waste Management Other Molybdenum Autoclave Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Total Sustaining Capital Costs Total Sustaining Capital Costs Total Capital Costs Total Capital Costs Nolybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Not Capital Costs	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -7 -74 -74 -74 -24 -24 -41 -41 -39 -39 -39 -22 -22 -134 -134 -7 -1149 -1439 -14 -39 -39 -14 -31 -352 -352 -3 -11439 -1439 -14 -31 -1439 -14 -31 -1439 -14 -31 -1439 -14 -32 -1439 -14 -33 -34 -94 -94 -34 -94 -94 -35 -14 -14 -1 -1174 -1,174 -1 -1,174 -1 -1,174 -1 -1	-559 -58 -589 -58 -589 -58 -589 -991	2 -65.2 5 -6.2 5 9.2	2 -65 6 992	22 -65.2 6 6 92:0	-58 991	-104 -104 -104	-104 -104 -104 -104	-63 1,030	-63 1,030	-63 1,030 1	-84 -8 310 1,31	-84 1,310 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-140 1,662 -900 -900 762	-108 1,845 1,845	8 -10(6 5 1,84!)	1.845 1.845 1.845	-108 1,845	-108 -10 1,845 1,8
NPV @ 8% DROR \$ M 4,964 5,562	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs One Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow NPU @ 05 DROR	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -7 -74 -74 -74 -24 -24 -41 -41 -39 -39 -39 -22 -22 -134 -134 -7 -1149 -1439 -14 -39 -39 -14 -31 -352 -352 -3 -11439 -1439 -14 -31 -1439 -14 -31 -1439 -14 -31 -1439 -14 -32 -1439 -14 -33 -34 -94 -94 -34 -94 -94 -35 -14 -14 -1 -1174 -1,174 -1 -1,174 -1 -1,174 -1 -1	-559 -58 -589 -58 -589 -58 -589 -991	2 -65.2 5 -6.2 5 9.2	2 -65 6 992	22 -65.2 6 6 92:0	-58 991	-104 -104 -104	-104 -104 -104 -104	-63 1,030	-63 1,030	-63 1,030 1	-84 -8 310 1,31	-84 1,310 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-140 1,662 -900 -900 762	-108 1,845 1,845	8 -10(6 5 1,84!)	1.845 1.845 1.845	-108 1,845	-108 -10 1,845 1,8
NPV@100 DROR \$ M 2,545 2,987 Image: Control of the	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Waste Management Other Molybdenum Autoclave Sustaining Capital Costs Sustaining Capital Costs Waste Management Other Molybdenum Autoclave Statal Costs Sustaining Capital Costs Total Capital Costs Open It Processing Infrastructure Sustaining Capital Costs Total Capital Costs Total Capital Costs Sustaining Capital Costs Total Capital Costs Total Capital Costs Sustaining Capital Costs Total Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 0% DROR Sustaining Capital Costs	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -7 -74 -74 -74 -24 -24 -41 -41 -39 -39 -39 -22 -22 -134 -134 -7 -1149 -1439 -14 -39 -39 -14 -31 -352 -352 -3 -11439 -1439 -14 -31 -1439 -14 -31 -1439 -14 -31 -1439 -14 -32 -1439 -14 -33 -34 -94 -94 -34 -94 -94 -35 -14 -14 -1 -1174 -1,174 -1 -1,174 -1 -1,174 -1 -1	-559 -58 -589 -58 -589 -58 -589 -991	2 -65.2 5 -6.2 5 9.2	2 -65 6 992	22 -65.2 6 6 92:0	-58 991	-104 -104 -104	-104 -104 -104 -104	-63 1,030	-63 1,030	-63 1,030 1	-84 -8 310 1,31	-84 1,310 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-140 1,662 -900 -900 762	-108 1,845 1,845	8 -10(6 5 1,84!)	1.845 1.845 1.845	-108 1,845	-108 -10 1,845 1,8
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Payback years 6.1 6.3 6.1 6.3 6.1 6.3 6.1 6.3 6.1 6.3 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Waste Management Other Waste Management Other Waste Management Other Molybdenum Autoclave Escalation/De-stopics Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Total Capital Costs Sustaining Capital Costs Other Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 9% DROR NPV @ 98 DROR NPV @ 7% DROR	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -39 -39 -39 -22 -22 -134 -134 -7 -352 -352 -3 -216 -216 -2 -1149 -1439 -14 -39 -39 -39 -1,439 -14 -31 -1,174 -1,174 -1,174 -1,174 -1,174	-559 -58 -589 -58 -589 -58 -589 -991	2 -65.2 5 -6.2 5 9.2	2 -65 6 992	22 -65.2 6 6 92:0	-58 991	-104 -104 -104	-104 -104 -104 -104	-63 1,030	-63 1,030	-63 1,030 1	-84 -8 310 1,31	-84 1,310 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-140 1,662 -900 -900 762	-108 1,845 1,845	8 -10(6 5 1,84!)	1.845 1.845 1.845	-108 1,845	-108 -10 1,845 1,8
	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Seration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Sustaining Capital Costs Open Pit Processing Infrastructure Sustaining Capital Costs Open Pit Processing Infrastructure Sustaining Capital Costs Open Pit Processing Infrastructure Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 7% DROR NPV @ 8% DROR NPV @ 8% DROR NPV @ 80% DROR	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -39 -39 -39 -22 -22 -134 -134 -7 -352 -352 -3 -216 -216 -2 -1149 -1439 -14 -39 -39 -39 -1,439 -14 -31 -1,174 -1,174 -1,174 -1,174 -1,174	-559 -58 -589 -58 -589 -58 -589 -991	2 -65.2 5 -6.2 5 9.2	2 -65 6 992	22 -65.2 6 6 92:0	-58 991	-104 -104 -104	-104 -104 -104 -104	-63 1,030	-63 1,030	-63 1,030 1	-84 -8 310 1,31	-84 1,310 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-140 1,662 -900 -900 762	-108 1,845 1,845	8 -10(6 5 1,84!)	1.845 1.845 1.845	-108 1,845	-108 -10 1,845 1,8
	Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Waste Management Open Pit Processing Infrastructure Waste Management Other Waste Management Other Molybdenum Autoclave Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Sustaining Capital Costs Total Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 7% DROR NPV @ 78 DROR NPV @ 10% DROR IRR Payback	\$ M	-6,710 -59 -59 -59 -59 -59 -59 -59 -59 -59 -59	-59 -59 -3 -108 -108265 -265 -2 -21 -21 -21 -40 -40 -106 -106 -7 -74 -74 -41 -41 -39 -39 -39 -22 -22 -134 -134 -7 -352 -352 -3 -216 -216 -2 -1149 -1439 -14 -39 -39 -39 -1,439 -14 -31 -1,174 -1,174 -1,174 -1,174 -1,174	-559 -58 -589 -58 -589 -58 -589 -991	2 -65.2 5 -6.2 5 9.2	2 -65 6 992	2 -65.2 6 9 92	-58 991	-104 -104 -104	-104 -104 -104 -104	-63 1,030	-63 1,030	-63 1,030 1	-84 -8 310 1,31	-84 1,310 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-84 1,310	-140 1,662 -900 -900 762	-108 1,845 1,845	8 -10(6 5 1,84!)	1.845 1.845 1.845	-108 1,845	-108 -10 1,845 1,8

Proposed Pebble Project DEIS Technical Review of Economic Feasibility 39-Year Mine Resource Case, Sensitivity Case 2 Technical Memorandum No. 5, Attachment 5A-2e Page 1 of 4

2011 Preliminary Assessment

39-Year Mine Resource Case, Sensitivity Case 2 - Double Rate of Production

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Processing				2.0	2.0	2.0	2.0	-	2.0		2.0	-			2.0	2.0	,		2.0	1.5	1.5	1.5	1.5	1.0	1	·	<u>' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' </u>	1	1	1.3	1.5	1.5	1.5	1.0	1.5	1	-	7.2	3.2	3.2	1	7.2		
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Cu Grade	%	0.			_	0.55	0.55			0.55	0.55		55	0.55	0.55	0.55	0.5			0.55	0.48	0.48		0.48		1							0.48			,	_	0.47	0.47					
Au Grade	oz/t			0.0	_	0.011	0.011	0.0		0.011	0.011	0.01		0.011	0.011	0.011	0.01					0.0106		0.0106									0.0106				_		0.0095					
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Ad OZ Ag Oz	k oz			3,0	_	3.099	3,099			3.099	3,099		_	3,099	3,099						3,099	3,099		3,099									3,099				_	3.099	3,099					
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Metal Prices	<u> </u>	1																									1		1	1						1					1			
Cu	\$/#	2.			_	2.50	2.50			2.50	2.50		_	2.50	2.50	2.50	2.5			2.50	2.50	2.50		2.50									2.50					2.50	2.50					
Au	\$/oz			1,050.		50.00 1	.,	.,	.00 1,05		1,050.00		_			1,050.00			0.00 1,09				1,050.00	1,050.00		1,050.00		1,050.00				1,050.00			1,050.00		00 1,05					1,050.00		00 1,050.0
Мо	\$/#	13.		13.	_	13.50	13.50			13.50	13.50		_	13.50	13.50	13.50	13.5		-	-	13.50	13.50		13.50									13.50					13.50	13.50					
Ag	\$/oz	15.	_	15.	_	15.00	15.00		_	15.00	15.00		_	15.00	15.00			_	-		15.00	15.00		15.00		-							15.00				_	15.00	15.00			+		
Rh	\$/kg	3,000.	00	3,000.	.00 3,00	00.00 3	3,000.00	3,000.0	.00 3,00	00.00 3	3,000.00	3,000.0	00 3,0	00.00 3	,000.000	3,000.00	3,000.0	3,000	0.00 3,00	0.00 3,0	000.00 3,	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.0	00 3,00	00.00	3,000.00	3,000.00	3,000.00	3,000.00	3,000.0	00 3,000.0
Pd	\$/oz	490.	00	490.	.00 49	190.00	490.00	490.0	.00 49	90.00	490.00	490.0	00 4	90.00	490.00	490.00	490.0	0 490	0.00 49	90.00 4	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.00	490.0	00 49	90.00	490.00	490.00	490.00	490.00	490.0	00 490.0
Gross Revenue														\neg																														
Cu	\$ M		133,3	66 2,1	168 2	2,168	2,168	2,16	168 2	2,168	2,168	2,16	68	2,168	2,168	2,168	2,16	8 2,1	,168 2	2,168	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,838	1,7	13 1	1,713	1,713	1,713	3 1,713	1,713	1,71	13 1,7
Au	\$ M	1	52,3		727	727	727	_		727	727		_	727	727	727	7 72			727	680	680		680									680				_	580	580	580				
Mo	\$ M		37,6	37 5	522	522	522	52	522	522	522		22	522	522	522			522	522	567	567	567	567	567	56	7 567	567	567	567	567	567	567	567	567	60	07	607	607	607	7 607	607	60	07 60
Ag	\$ M				42	42	42		42	42	42		42	42	42	42			42	42	42	42		42		_		+	_				42				42	42	42					42 4
Rh	\$ M				80	80	80	-	80	80	80	-	80	80	80	80	_		80	80	80	80		80	-	 	_	, 	+				80				80	80	80		0 80	-		80 8
Pd	\$ M			_	9	9	9	<u> </u>	g g	9	9		q	9	9	ç	1	9	9	q	9	9	9	9	1	1 -		1 0		9	9	q	9	9	9	1	9	9	q	9	9 0	9	_	9
Total Gross Revenue	\$ M	233,9	08 233,5	10 3,5	348 3	3,548	3,548	3,54	348 3	3,548	3,548	3,54	48	3,548	3,548	3,548	3,54	18 3 5	548 3	3,548	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,216	3,03	31 3	3,031	3,031	3,031	1 3,031	3,031	3,03	31 3,03
Realization Charges	\$ M	-19,9			_	-311	-311			-311	-311		_	-311	-311	-311					-281	-281		-281									-281					-268	-268					
Net Smelter Revenue	\$ M				_		3,236				3,236		_		3,236							2,935			2,935			2,935					2,935						2,763			2,763		
Operating Costs	D IVI	2 ! 5,9	70 215,:	1/3 3,2	:30] :	3,2301	3,2301	3,23	2301 3	3,2301	3,230	3,23		5,2301	3,2301	3,230	7 3,43	0 3,2	,230] 3	1,230	2,9551	2,953	ددو,ع	2,900	2,95.	2,95	3 2,93.	1 2,955	1 2,950	1 2,955	2,555	2,953	ا دده	ددو,2	2,953	2,70	03 2	2,703	2,703	2,763	31 2,103	1 2,703	2,76	03 2,76
	1 6 64	00.0	sol oco	C) 11	1001	1 100	1 100	1 1 1	100 1	1 100	1.100	1 110	oo l	1 100	1 100	1 100	1 10	0 11	100	100	1.006	1.006	1.006	1.006	1.006	1 100	1 100	1.006	1 1006	1 1006	1.006	1.006	1.006	1.006	1,006	1.00	01 1	1 001	1 001	1 001	1 1001	1 001	1.00	04 100
Operating Cost (original)	\$ M	-96,0	55 -96 _/ t	63 -1,1	180 -	-1,180	-1,180	-1,18	180 -1	1,180	-1,180	-1,18	80 -	1,180	-1,180	-1,180	-1,18	-1,1	,180 -1	,180 -	-1,086	-1,086	-1,086	-1,086	-1,086	-1,086	-1,080	-1,086	-1,086	-1,086	-1,086	-1,086	-1,086	-1,086	-1,086	-1,88	-1	1,881	-1,881	-1,881	-1,881	-1,881	-1,88	81 -1,88
1 Franksis			1	1																						1	-	-	1															
Factor						_						-		-				_	_	_	_																_				-	<u> </u>		
Operating Cost (revised)		2270	20 1477	10 20	NEC .	2056	2050	201	NEC. 1	2056	2056	201	r.c.	2050	2056	2050	205	·c 20	2056	2056	1040	10.40	10.40	1040	1046	1046	104	1040	1040	1040	1040	1040	10.40	1040	10.40	0.0	01	001	0.04	0.01	1 001	0.01	0.0	01 01
Operating Cost (revised) Operating Profit		117,9	06 117,5	10 20)56	2056	2056	20!	056	2056	2056	205	56	2056	2056	2056	205	6 20	056	2056	1849	1849	1849	1849	1849	1849	1849	1849	1849	1849	1849	1849	1849	1849	1849	88	81	881	881	881	1 881	881	88	81 88
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes		117,9																																										
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback		117,9	-5,8	34 -1	103	-103	-103	-10	103	-103	-103	-10	03	-103	-103	-103	-10	3 -1	103	-103	-92	-92	-92	-92	-92	-92	2 -92	92	-92	-92	-92	-92	-92	-92	-92	-4	44	-44	-44	-44	4 -44	-44	-4	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%)		117,9		34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit		117,9	-5,8	34 -1 '10 -1	103	-103 -108	-103	-10 -10	103	-103	-103	-10 -10	03	-103	-103	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92	-92	-92 -98	-92	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92	-92 -98	-92 -98	-4	44 53	-44	-44	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs		117,9	-5,8	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs			-5,6 -6,7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining	\$ M	-4	-5,8 -6,7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process	\$ M	-4 -1,0	-5,6 -6,7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration	\$ M \$ M	-4 -1,0	-5,6 -6,7 31 58 84	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molydenum Saration Secondary Gold Plant	\$ M \$ M \$ M	-4 -1,0	-5,6 -6,7 31 58 84 51	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure	\$ M \$ M \$ M \$ M	-4 -1,0 -1 -1	-5,6,7 -6,7 31 388 384 51	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings	\$ M \$ M \$ M \$ M	-4 -1,0 -1 -1,-4 -2	-5,6 -6,7 31 31 58 84 45 51 22 24	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines	\$ M \$ M \$ M \$ M \$ M \$ M	-4 -1,0 1 -1 -4 -2	-5,6 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road	\$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4 -1,0 1 -1 -4 -2 -1	-5.8 -6.7 -5.8 -5.8 -5.8 -5.1 -5.2 -5.2 -5.3 -6.7 -6.7 -6.7 -6.7 -6.7 -6.7 -6.7 -6.7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure	\$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4 -1,0 -1,-1 -4 -4 -2 -1,-1	-5,8 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Por Infrastructure Port process	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4 -1,0 -1,1 -4,-4 -2 -1,-1	-5,6,7 -6,7 31 88 84 41 51 22 24 44 98 85 52 55 55	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4 -1,0 -1,1 -4 -2 -1,1 -1,1 -1,1 -2,-5	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4. -1,0 -1,-1,-1,-1,-1,-1,-1,-1,-1,-1,-1,-1,-1,-	-5,8 -6,7 -6,7 -6,7 -6,7 -6,7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4 -1,0 -1 -4 -2 -2 -1 -1,-1 -1,-1 -1,4 -1,4	-5,8 -6,7 -6,7 -6,7 -6,7 -7,7 -8,8 -8,4 -8,4 -9,4 -9,8 -9,4 -9,8 -9,7 -9,7 -9,7 -9,7 -9,7 -9,7 -9,7 -9,7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4 -1,0 -1; -4 -2 1 -1,1 -1 -1,4 -2,5,7	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4 -1,0 -1,-1 -4 -2 -1 -1,-1 -5 -5,-5 -1,4 -8 -5,7,7 -3	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -7,7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -4.4 -2.2 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	-5,8 -6,7 -6,7 -6,7 -6,7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	34 -1 '10 -1	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Casts Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-44 -1,0 -1,-1 -4 -4 -2 -1,-1 -1,-1 -5,-7 -3 -3 1,1,3	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -7	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-44 -1,0 -1,-1 -4 -4 -2 -1,-1 -1,-1 -5,-7 -3 -3 1,1,3	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -7	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Casts Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-44 -1,0 -1,1 -4,4 -2 -1,1 -1,1 -8 -5,7 -3,3 1,3 -4,6	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-44 -1,0 -1,1 -4,4 -2 -1,1 -1,1 -8 -5,7 -3,3 1,3 -4,6	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-44 -1,0 -1,1 -4,4 -2 -1,1 -1,1 -8 -5,7 -3,3 1,3 -4,6	-5,8 -6,7 -6,7 -6,7 -6,7 -331 -381 -382 -394 -398 -397 -397 -397 -4,8 -4,8 -4,8 -4,8 -4,8 -4,8 -4,8 -4,8	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -6,7 -7,7	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	-5,8 -6,7 -6,7 -6,7 -6,7 -6,7 -6,6 -6,7 -6,6 -6,7 -7,7 -7	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Seration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Vaste Management	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1,0,0 -1,0,1 -4.4 -1,-1 -1,-1 -1,-1 -5,-7,-7 -1,1,4,4,-1 -4,6,6	-5,8 -6,7 -6,7 -6,7 -6,7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -4.1.0 -1.1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1.	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -6,7 -7,7	1334 -1170 -1170 -1170 -178	103	-103 -108	-103 -108	-10 -10	103	-103 -108	-103 -108	-10 -10	03	-103 -108	-103 -108	-103 -108	3 -10 3 -10)3 -1)8 -1	103	-103 -108	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92	2 -92	92 -92	-92	92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-92 -98	-4	44 53	-44 -53	-44 -53	-44 -53	4 -44 3 -53	-44	-4 -5	44 -4
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Uses Costingency Sub-Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	-5,6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7	1334 -1 170 -1 1,8	1103	-103 -108 1,845	-103 -108 1,845	-10 -10 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845	-103 -108 1,845	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03	-103 -108 1,845	-103 -108 1,845	-103 -108	3 -10 3 -10 5 1,84	333 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	1103 1108 1845 1	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-9; -98 1,658	2 -92 8 -91 8 1,658	2 -92 3 -98 3 -1,658	-92 -98 1,658	92 92 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	444 44 553 388 484	-44 -53 784	-44 -53 784	-44 -53 784	4 4 -44 4 3 3 -55 4 4 78 4 78 4 78	-44 -53 784	-44	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Contingency Sub-Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Usus Costs Open Pit Processing Infrastructure Waste Management Other Waste Management Other Molybdenum Autoclave Usate Management Other Molybdenum Autoclave Usate Management Other Molybdenum Autoclave Usate Management Other	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -4.1.0 -1.1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1.	-5,8 -6,7 -6,7 -6,7 -6,7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	1334 -1 170 -1 1,8	1103 108 1345 145 145 145 145 145 145 145 145 145 1	-103 -108 1,845	-103 -108 1,845	-1ti-	1103 1008 1008 1008 1008 1008 1008 1008	-103 -108 -108 -108 -108 -108 -108 -108 -108	-103 -108 1,845	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 008 008 008 008 008 008 008 008 008 0	-103 -108 -108 -108 -96	-103 -108 1,845	-103 1.845	3 -103 3 -106 5 1,84	3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-96	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-9; -98 1,658	2 -92 8 -98 8 1,658	2 -92 3 -98 3 1,658	-92 -98 1,658	92 -922	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658		444 444	-44 -53 784	-44 -53 784	-44 -53 784	4 4 -44 4 784 4 784 5 -176	-44 -53 784	-44 -55 7E	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	-5,6 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -6,6 -7,7 -7,7	-1334 -170 -170 -170 -170 -170 -170 -170 -170	1003 1008 1008 1008 1008 1008 1008 1008	-103 -108 1,845 -108 1,845	-103 -108 1,845 -1,845	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	1003 1008 1008 1008 1008 1008 1008 1008	-103 -108 11,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 -108 -1,845 -1,845	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1.845 -108 1.845	-103 -108 1,845 -1,845	-103 1,845 1,845	3 -10 3 -10 3 1,84 1,84	333 -1 -1	-96 -96	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -93 -93 -1,658 -1,658	-9; -94 1,658	2 -92 8 -99 8 1,658 1,658	9 -92 8 -92 8 1,658 1,658	-92 -98 1,658	928 -928 -988 -988 -988 -988 -988 -988 -	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	444 444 553 844 847 876 766 766	-44 -53 -784	-44 -53 784	-44 -53 784 -176 -176	4 -444 3 -553 3 -553 4 784 784 6 -176 5 -176	-44 -53 784	-4-7-6-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	76 -1'76 -1'
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Open Pit Processing Infrastructure Vaste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Costs Other Molybdenum Autoclave Total Sustaining Capital Costs Total Costs	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	-5,8 -6,7 -6,7 -6,7 -6,7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	1334 -1 1710 -1 1.8 1.8 1.95 1.95	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! -11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Total Capital Costs Nobybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Total Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0	-5,8 -6,7 -6,7 -6,7 -6,7 -6,7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7 -7	1334 -1 170 -1 1,8 1,8 1,9 1,9 1,9 1,9 1,9 1,9 1,9 1,9 1,9 1,9	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 1,845 -1,845	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	1003 1008 1008 1008 1008 1008 1008 1008	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! -11! 1,54	2 -92 8 -98 8 1,658 8 1,658	9 -92 8 -92 8 1,658 1,658	-922 -996 1,658 1,658	928 -928 -988 -988 -988 -988 -988 -988 -	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Seration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Gash Flow Net Cash Flow Net Cash Flow Net Cash Flow Net On One	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	-5,6 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -7	1334 -1 1710 -1 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! -11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Open Pit Processing Infrastructure Vaste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 9% DROR NPV @ 9% DROR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	-5,8 -6,7 -6,7 -6,7 -6,7 -1,0 -1,0 -1,0 -1,0 -1,0 -1,0 -1,0 -1,0	1334 -1 1710 -1 1.8 1.8 1.8 1.95 1.95 1.7 1.22 1.22 1.7 1.33,4 1.45 1.7 1.45 1.7 1.45 1.7 1.45 1.7 1.45 1.45 1.45 1.45 1.45 1.45 1.45 1.45	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 7% DROR NPV @ 7% DROR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	55, 66, 77, 74, 21, 15, 55, 54, 56, 77, 74, 11, 15, 55, 56, 56, 57, 77, 74, 21, 77, 76, 76, 76, 76, 77, 77, 78, 78, 78, 78, 78, 78, 78, 78	1334 -1 1710 -1 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Contingency Sub-Total Capital Costs Ususaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Waste Management Other Molybdenum Autoclave Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 8% DROR NPV @ 8% DROR NPV @ 78 DROR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	5.55.66.7 -5.66.7 -6.7 -6.7 -6.7 -6.7 -6.7 -6.7 -	1334 -1 1710 -1 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 9% DROR NPV @ 9% DROR NPV @ 10% DROR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	5.55.66.7 -5.66.7 -6.7 -6.7 -6.7 -6.7 -6.7 -6.7 -	1334 -1 1710 -1 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Contingency Sub-Total Capital Costs Ususourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 8% DROR NPV @ 8% DROR NPV @ 8% DROR NPV @ 8% DROR NPV @ 78 DROR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -1.0 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1	5.5, 6.6, 7.7 7.4 1.1 1.5 5.5 1.7 7.5 5.5 1.7 7.7 1.1 1.1 1.5 5.5 1.7 7.6 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1	1334 -1 1710 -1 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 7% DROR NPV @ 7% DROR NPV @ 10% DROR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -4.0 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1	-5,6 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -7	1334 -1 1710 -1 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,8 1,	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444
Operating Cost (revised) Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 5% DROR NPV @ 7% DROR NPV @ 7% DROR NPV @ 10% DROR IRR	\$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M \$ M	-4.4 -4.0 -1.0 -1.1 -1.1 -1.1 -1.1 -1.1 -1.1 -1	-5,6 -6,7 -6,7 -6,7 -6,7 -6,7 -6,7 -7,7 -7	1334 -1 1710 -1 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.8 1.	1003 1008 3345 	-103 -108 1,845 -108 1,845	-103 -108 -1,845 -1,845 -1,745 -96 -96 -1,750	-10 -10 -18 -18 -18 -18 -18 -18 -18 -18 -18 -18	103 108 108 108 108 108 108 108 108 108 108	-103 -108 11,845 -108 -196 -96 -96	-103 -108 -1,845 -96 -96 -97	-10 -11 -11 -11 -11 -11 -11 -11 -11 -11	03 08 08 08 08 08 08 08 08 08 08 08 08 08	-103 -108 1,845 -108 -96 -96 -96	-103 -108 1,845 -108 -108 -108 -108 -108 -108 -108 -108	-103 1,845 1,845	3 -10 3 -10 5 1,84 1,84	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	-96 -96 -750	-103 -108 -108 -108 -108 -108 -108 -108 -108	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658 1,658	-119 -119 -119	-11! 1,54	2 -92 8 -98 8 1,658 8 1,658	2 -92 8 -98 8 1,658 9 1,658 9 1,658	-922 -996 1,658 1,658	92 -922 3 -988 1,658 1,658 1,658	-92 -98 1,658 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-92 -98 1,658	-117 -117 -117	444 444	-44 -53 784	-44 -53 784 784	-44 -53 -784 -176 -176 -176 -608	4 4 -44 4 3 3 -55 3 -55 4 784 784 6 -176 6 -176 6 -176 6 -176 8 6 60	-44 -53 784 784	-4-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-5-	444

Proposed Pebble Project DEIS Technical Review of Economic Feasibility 39-Year Mine Resource Case, Sensitivity Case 2 Technical Memorandum No. 5, Attachment 5A-2e Page 2 of 4

2011 Preliminary Assessment

39-Year Mine Resource Case, Sensitivity Case 2 - Double Rate of Production

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Gross Revenue	-, 22 -330.00	-				.50.0	450.0	1	-50	7	- 5.50	5.05							_	+-	+-										_	+-	+-	+								
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Operating Cost (revised) Operating Profit Royalties and Local Production Taxes	117,906	117,510	881	881	881	88	81 88	31 8	81	881	881	881	881						-269		_					-1,608 3,338	-1,608 3,338	-1,608 3,338	_					48 -1							-1,888 -1,8	
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Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%)	117,906		-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53			-59	-59		-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit	117,906	-5,834	-44	-44 -53	-44 -53	-4- -5:	14 ~4 53 ~5	14 i3 -	44 53	-44	-44	-44	-44			-59 -59	-59 -59		-59	9 2,45 -9 9 -12	98 -9	98 - ·	520 2, 101 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167	3,338 -167 -167	3,338 -167	3,338 -167 -167	3,338 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,8 4,584 4,9 -229 -2	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%)	117,906	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining	\$ M -431	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process	\$ M -431 \$ M -1,058	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration	\$ M -431 \$ M -1,058 \$ M -84	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant	\$ M -431 \$ M -1,058 \$ M -84 \$ M -161	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure	\$ M -431 \$ M -1,058 \$ M -84	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings	\$ M -431 \$ M -1,058 \$ M -84 \$ M -161 \$ M -422	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tallings Pipelines	\$ M -431 \$ M -1,058 \$ M -84 \$ M -161 \$ M -422 \$ M -294	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure	\$ M	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process	\$ M -431 \$ M -1,058 \$ M -84 \$ M -161 \$ M 422 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -87	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation	\$ M -431 \$ M -1,058 \$ M -161 \$ M -422 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -87 \$ M -87	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs	\$ M -431 \$ M -1,058 \$ M -84 \$ M -161 \$ M -224 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -87 \$ M -87 \$ M -534 \$ M -534	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency	\$ M -431 \$ M -1,058 \$ M -161 \$ M -422 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -87 \$ M -87	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave	\$ M -431 \$ M -1,058 \$ M -84 \$ M -61,058 \$ M -64 \$ M -422 \$ M -98 \$ M -162 \$ M -155 \$ M -87 \$ M -87 \$ M -534 \$ M -1,407 \$ M -866 \$ M -5,757 \$ M -374	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment	\$ M	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53						-59	9 2,45 -9 9 -12	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure	\$ M -431 \$ M -1,058 \$ M -161 \$ M -422 \$ M -294 \$ M -162 \$ M -162 \$ M -155 \$ M -155 \$ M -534 \$ M -1,407 \$ M -5,757 \$ M -5,757 \$ M -374 \$ M -374 \$ M -3,74	-5,834 -6,710	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53			-59	-59	-59	-528	-99 -12 -99 -12 -88 -23	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Total Capital Costs	\$ M	-5,834	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53			-59	-59	-59	-59	-99 -12 -99 -12 -88 -23	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs	\$ M -431 \$ M -1,058 \$ M -84 \$ M -294 \$ M -294 \$ M -98 \$ M -162 \$ M -155 \$ M -155 \$ M -87 \$ M -5,757 \$ M -866 \$ M -5,757 \$ M -374 \$ M 121 \$ M 1,315 \$ M -4,695	-5,834 -6,710	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53			-59	-59	-59	-528	-99 -12 -99 -12 -88 -23	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs	\$ M -431 \$ M -1,058 \$ M -161 \$ M -422 \$ M -294 \$ M -162 \$ M -155 \$ M -155 \$ M -334 \$ M -5,757 \$ M -374 \$ M -374 \$ M -3,74 \$ M -3,757 \$ M -4,695	-5,834 -6,710	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53			-59	-59	-59	-528	-99 -12 -99 -12 -88 -23	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port Infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing	\$ M -431 \$ M -1,058 \$ M -161 \$ M -422 \$ M -294 \$ M -162 \$ M -155 \$ M -155 \$ M -334 \$ M -5,757 \$ M -374 \$ M -374 \$ M -3,74 \$ M -3,757 \$ M -4,695	-5,834 -6,710	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53			-59	-59	-59	-528	-99 -12 -99 -12 -88 -23	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management	\$ M -431 \$ M -1,058 \$ M -161 \$ M -422 \$ M -162 \$ M -162 \$ M -162 \$ M -155 \$ M -334 \$ M -5,757 \$ M -374 \$ M -3,74 \$ M 1,315 \$ M 1,315 \$ M -4,695	-5,834 -6,710	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53			-59	-59	-59	-528	-99 -12 -99 -12 -88 -23	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other	\$ M -431 \$ M -1,058 \$ M -161 \$ M -224 \$ M -224 \$ M -162 \$ M -165 \$ M -867 \$ M -866 \$ M -834 \$ M -1,407 \$ M -866 \$ M -3,74 \$ M -374 \$ M -4,695 \$ M -4,695 \$ M -7,225 \$ M -7,225 \$ M -3,364	-5,834 -6,710	-44 -53	-44 -53	-44 -53	-4 -5:	14 ~4 53 ~5	14 i3 -	44 53	-44 -53	-44 -53	-44 -53	-44 -53			-59	-59	-59	-528	-99 -12 -99 -12 -88 -23	98 -9 23 -12	98 - ·	520 2, 101 - 126 -	589 2 104 129	-104 -129	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	3,338 -167 -167	8 3,338 7 -167 7 -167	8 3,338 7 -167 7 -167	8 3,80 7 -19 7 -19	48 -1 02 4 90	-1,888 4,584 -229 -229	-1,888 4,584 -229 -229	-229 -229	4 4,58 9 -22 9 -22	84 4 29 -	-229 -229	-1,888 -1,4 4,584 4,5 -229 -1	,888 ,584 -229 -229
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Total Capital Costs Open Pit Processing Infrastructure Vaste Management Other Molybdenum Autoclave Waste Management Other	\$ M -431 \$ M -1,058 \$ M -64 \$ M -66 \$ M -224 \$ M -98 \$ M -165 \$ M -185 \$ M -155 \$ M -87 \$ M -334 \$ M -1,407 \$ M -3,74 \$ M -3,74 \$ M -2,76 \$ M -3,34 \$ M -7,225 \$ M -7,225 \$ M -7,225 \$ M -3,364 \$ M -3	-5,834 -6,710	-44 -53 784	-44 -53 784	-44 -53 784	-4-4	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	14	44 53 84 84	-44 -53 7784	-44 -53 784	-44 -53 784	-44 -53 784			-59	-59	-59	-528	2.45 -99 -12 -98 -223	552 2,45 98 -9 23 -12 31 2,23	88	520 2, 101 126 294 2,	1004	2,589 -104 -129 2,356	3,338 -167 -167 3,004	3,338 -167 -167 3,004	3,338 -167 -167 3,004	3,338 -167 -167 3,004	3,338 -167 -167 3,004	8 3,338 7 -167 7 -167 4 3,004	88 3,338 77 -167 77 -167 74 3,004	8 3,80: 77 -19: 77 -19: 4 3,42	20 448 -1 20 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	-1,888 4,584 -229 -229 -229 4,125	-1,888 4,584 -229 -229 4,125	4,584 -229 -229 4,129	4 4,58 9 -22 9 -22 5 4,12	229	,584 -229 -229 ,125 ,125	-1,888 -1,4584 4.1 -229 -1 -229 -229 -24 -4,125 -4,	,888 ,584 -2229 -229 ,125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Uses Management Other Molybdenum Autoclave Uses Management Other Molybdenum Autoclave Total Sustaining Capital Costs	\$ M -431 \$ M -1,058 \$ M -161 \$ M -224 \$ M -224 \$ M -162 \$ M -165 \$ M -867 \$ M -866 \$ M -834 \$ M -1,407 \$ M -866 \$ M -3,74 \$ M -374 \$ M -4,695 \$ M -4,695 \$ M -7,225 \$ M -7,225 \$ M -3,364	-5,834 -6,710	-44 -53 784	-44 -53 784	-44 -53 784	-44	14 -4.4 33 -5.5 34 78	144	44 453 884 884 884 884 888 884 888 888 888 88	-44 -53 7784	-44 -53 -784	-44 -53 784	-44 -53 784			-1,878	-1,878	-59	3 -1,878	9 2,45 -99 -12 8 2,23	552 2,45 98 -9 23 -12 31 2,23 31 2,23 30 -13	52 2.1 11 2.1 11 2.1 11 2.1 11 2.1 11 2.1 11 2.1 11 2.1	520 2; 101 - 126 - 294 2.	589 2	-208	3,338 -167 -167 3,004	3,338 -167 -167 3,004	3,338 -167 -167 3,004	3,338 -1167 -1167 3,004	3,338 -167 -167 3,004	8 3,336 7 -167 7 -167 4 3,004	88 3,338 77 -167 77 -167 44 3,004	8 3,80: 7 -1997 7 -1994 4 3,42	448 202 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	-1,888 4,584 -229 -229 -229 4,125	-1,888 4,584 -229 -229 4,125	4,584 -229 -229 4,125	4 4,58 9 -22,99 -22 5 4,12	229	,584 -229 -229 ,125	-1,888 -1,4,584 4,1,294 -1,295 -1,205 -1,205 -1,205 -1,205 -1,205 -1,205 -1,205 -1,205 -1,205 -1,205 -1,205	.888 .584 -229 -229 .125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Cests Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Under Costs Contingency Total Costs Sustaining Capital Costs Sustaining Capital Costs Total Sustaining Capital Costs Total Sustaining Capital Costs Total Sustaining Capital Costs	\$ M -431 \$ M -1,058 \$ M -64 \$ M -66 \$ M -224 \$ M -98 \$ M -165 \$ M -185 \$ M -155 \$ M -87 \$ M -334 \$ M -1,407 \$ M -3,74 \$ M -3,74 \$ M -2,76 \$ M -3,34 \$ M -7,225 \$ M -7,225 \$ M -7,225 \$ M -3,364 \$ M -3	-5.834 -6.710 -4.895	-44 -53 -784 -784 -176 -176	-44 -53 784	-44 -53 784	-4-4-5-5-7-8-7-8-7-8-7-8-7-8-7-8-7-8-7-8-7-8	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	44	44 53 84 84 76 76 -76	-44 -43 -43 -43 -43 -43 -43 -43 -43 -43	-44 -53 784	-44 -53 784	-44 -53 784			-1,878	-1,878	-1,878	3 -1,87£	8 8 -13 8 -13 8 -13	98 -9 23 -12 31 2,23 31 2,23 33 33 -13 33 33 -13 33 33 -13	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	520 2; 101 - 126 - 294 2; 169 - 169 -	104 129 356 :	-208 -208 -208	3,338 -167 -167 3,004 -435 -435	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435	7 -167 7 -167 7 -167 4 3,004	15 -435 15 -435 15 -435 15 -435	8 3,80: 7 -19:7 -19:4 3,42 5 -1,11* 5 -1,11*	48 202	-1,888 4,584 -229 -229 -229 4,125	-1,888 4,584 -229 -229 4,125	4,584 -229 -229 4,125 -192 -192 -192	4 4,58 9 -22,99 -22 5 4,12 2 -19 2 -19	229	-192 -192	-1,888 -1,4 -4,584 -4,4 -229 -229 -4,125 -4,125 -4,125 -4,125 -4,125 -1,	.888 .584 -229 -229 .125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipielines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs	\$ M -431 \$ M -1,058 \$ M -64 \$ M -66 \$ M -224 \$ M -98 \$ M -165 \$ M -185 \$ M -155 \$ M -87 \$ M -334 \$ M -1,407 \$ M -3,74 \$ M -3,74 \$ M -2,76 \$ M -3,34 \$ M -7,225 \$ M -7,225 \$ M -7,225 \$ M -3,364 \$ M -3	-5,834 -6,710	-44 -53 784 -176 -176 -176 -608	-44 -53 784	-44 -53 784	-4-4-5-7-88 -4-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	14	44 53 84 84 76 6 - 76 - 008	-44 -53 -784 	-44 -53 784 -176 -176 -176 -608	-144 -53 784	-44 -53 784 -176 -176 -176 608		103,629	-1,878 -1,878 -1,878 -1,937	-1,878 -1,878 -1,937	-1,878 -1,878	3 -1,87E	2.45 -99 -12 -99 -12 -88 -2.23 	30 -13 30 -13 30 1 2,10	52 2.1 54 2.1 55 2.2 56 2.2 57 2.1 58 3.2 58 3.2	520 2, 101	104 129 356 356 36 36 37 37 37 37 37 37 37 37 37 37 37 37 37	-208 -208 -208 -2148	3,338 -167 -167 3,004 -435 -435 -435 -2,259	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	8 3,338 7 -167 7 -167 4 3,004 3 -435 5 -435 5 -435 9 2,569	15 -435 15 -435 16 -435 17 -167 18 -435 19	8 3,80: 7 -19: 7 -19: 4 3,42 5 -1,11: 5 -1,11: 9 -2,3:0	448 1 02	-1,888 4,584 -229 -229 -229 4,125 -192 -192 -3,934	-1,888 4,584 -229 -229 4,125	-192 -192 -192 -192 -192	4 4,58 9 -22 9 -22 9 -22 5 4,12 2 -19 2 -19 2 -19 4 3,9	229	-192 -1934	-1,888 -1,4,584 4.1,4,584 4.1,	,888 ,584 -2229 -2229 ,125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Ussustaining Capital Costs Total Capital Costs Sustaining Capital Costs Total Capital Costs Total Capital Costs Notybdenum Autoclave Total Capital Costs Deen Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow	\$ M -431 \$ M -1,058 \$ M -84 \$ M -161 \$ M -224 \$ M -294 \$ M -165 \$ M -162 \$ M -155 \$ M -87 \$ M -5,757 \$ M -334 \$ M 1,315 \$ M 1,315 \$ M -4,695 \$ M -7,225 \$ M -3,344 \$ M -7,225 \$ M -3,364 \$ M -165 \$ M -165 \$ M -165 \$ M -17,27	-5,834 -6,710 -4,695 -4,695 -11,726 -16,421 88,545	-44 -53 784 -176 -176 -176 -608	-44 -53 784	-44 -53 784	-4-4-5-7-88 -4-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	44	44 53 84 84 76 6 - 76 - 008	-44 -53 -784 	-44 -53 784 -176 -176 -176 -608	-144 -53 784	-44 -53 784		103,629	-1,878	-1,878	-1,878 -1,878	3 -1,87E	2.45 -99 -12 -99 -12 -88 -2.23 	98 -9 23 -12 31 2,23 31 2,23 33 33 -13 33 33 -13 33 33 -13	52 2.1 54 2.1 55 2.2 56 2.2 57 2.1 58 3.2 58 3.2	520 2, 101	104 129 356 356 36 36 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38	-208 -208 -208	3,338 -167 -167 3,004 -435 -435 -435 -2,259	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	7 -167 7 -167 7 -167 4 3,004	15 -435 15 -435 16 -435 17 -167 18 -435 19	8 3,80: 7 -19: 7 -19: 4 3,42 5 -1,11: 5 -1,11: 9 -2,3:0	448 1 02	-1,888 4,584 -229 -229 -229 4,125 -192 -192 -3,934	-1,888 4,584 -229 -229 4,125	-192 -192 -192 -192 -192	4 4,58 9 -22 9 -22 9 -22 5 4,12 2 -19 2 -19 2 -19 4 3,9	229	-192 -1934	-1,888 -1,4 -4,584 -4,4 -229 -229 -4,125 -4,125 -4,125 -4,125 -4,125 -1,	,888 ,584 -2229 -2229 ,125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-secalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Usastining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow Cumulative Cash Flow NPV @ 0% DROR	\$ M -431 \$ M -1,058 \$ M -64 \$ M -66 \$ M -224 \$ M -98 \$ M -165 \$ M -185 \$ M -155 \$ M -87 \$ M -334 \$ M -1,407 \$ M -3,74 \$ M -3,74 \$ M -2,76 \$ M -3,34 \$ M -7,225 \$ M -7,225 \$ M -7,225 \$ M -3,364 \$ M -3	-5.834 -6.710 -4.895	-44 -53 784 -176 -176 -176 -608	-44 -53 784	-44 -53 784	-4-4-5-7-88 -4-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	14	44 53 84 84 76 6 - 76 - 008	-44 -53 -784 	-44 -53 784 -176 -176 -176 -608	-144 -53 784	-44 -53 784 -176 -176 -176 608		103,629	-1,878 -1,878 -1,878 -1,937	-1,878 -1,878 -1,937	-1,878 -1,878	3 -1,87E	2.45 -99 -12 -99 -12 -88 -2.23 	30 -13 30 -13 30 1 2,10	52 2.1 54 2.1 55 2.2 56 2.2 57 2.1 58 3.2 58 3.2	520 2, 101	104 129 356 356 36 36 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38	-208 -208 -208 -2148	3,338 -167 -167 3,004 -435 -435 -435 -2,259	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	8 3,338 7 -167 7 -167 4 3,004 3 -435 5 -435 5 -435 9 2,569	15 -435 15 -435 16 -435 17 -167 18 -435 19	8 3,80: 7 -19: 7 -19: 4 3,42 5 -1,11: 5 -1,11: 9 -2,3:0	448 1 02	-1,888 4,584 -229 -229 -229 4,125 -192 -192 -3,934	-1,888 4,584 -229 -229 4,125	-192 -192 -192 -192 -192	4 4,58 9 -22 9 -22 9 -22 5 4,12 2 -19 2 -19 2 -19 4 3,9	229	-192 -1934	-1,888 -1,4,584 4.1,4,584 4.1,	,888 ,584 -2229 -2229 ,125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Cests Capital Costs Mining Process Molydenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molydenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pt Processing Infrastructure Waste Management Other Molydenum Autoclave Total Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pt Processing Infrastructure Waste Management Other Molydenum Autoclave Total Sustaining Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR	\$ M -431 \$ M -1,058 \$ M -161 \$ M -294 \$ M -162 \$ M -162 \$ M -155 \$ M -534 \$ M -340 \$ M -374 \$ M -374 \$ M -374 \$ M -298 \$ M -4,695 \$ M -7,225 \$ M -7,225 \$ M -1315 \$ M -1315 \$ M -1,315 \$ M -3,364 \$ M -17,27 \$ M -3,364 \$ M -180 \$ M -180 \$ M -17,27 \$ M -3,364 \$ M -180 \$ M -180 \$ M -17,27 \$ M -180 \$ M -180 \$ M -17,27 \$ M -180 \$ M	-4.695 -4.695 -11,726 -16,421 88,545	-44 -53 784 -176 -176 -176 -608	-44 -53 784	-44 -53 784	-4-4-5-7-88 -4-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	14	44 53 84 84 76 6 - 76 - 008	-44 -53 -784 	-44 -53 784 -176 -176 -176 -608	-144 -53 784	-44 -53 784 -176 -176 -176 608		103,629	-1,878 -1,878 -1,878 -1,937	-1,878 -1,878 -1,937	-1,878 -1,878	3 -1,87E	2.45 -99 -12 -99 -12 -88 -2.23 	30 -13 30 -13 30 1 2,10	52 2.1 54 2.1 55 2.2 56 2.2 57 2.1 58 3.2 58 3.2	520 2, 101	104 129 356 356 36 36 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38	-208 -208 -208 -2148	3,338 -167 -167 3,004 -435 -435 -435 -2,259	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	8 3,338 7 -167 7 -167 4 3,004 3 -435 5 -435 5 -435 9 2,569	15 -435 15 -435 16 -435 17 -167 18 -435 19	8 3,80: 7 -19: 7 -19: 4 3,42 5 -1,11: 5 -1,11: 9 -2,3:0	448 1 02	-1,888 4,584 -229 -229 -229 4,125 -192 -192 -3,934	-1,888 4,584 -229 -229 4,125	-192 -192 -192 -192 -192	4 4,58 9 -22 9 -22 9 -22 5 4,12 2 -19 2 -19 2 -19 4 3,9	229	-192 -1934	-1,888 -1,4,584 4.1,4,584 4.1,	,888 ,584 -2229 -2229 ,125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-secalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 9% DROR NPV @ 9% DROR NPV @ 98 SDROR NPV @ 98 SDROR	\$ M	-5.834 -6.710 -4.695 -4.695 -11,726 -16,421 88,545 13,866 7,507 5,562	-44 -53 784 -176 -176 -176 -608	-44 -53 784	-44 -53 784	-4-4-5-7-88 -4-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	14	44 53 84 84 76 6 - 76 - 008	-44 -53 -784 	-44 -53 784 -176 -176 -176 -608	-144 -53 784	-44 -53 784 -176 -176 -176 608		103,629 103,629 32,247	-1,878 -1,878 -1,878 -1,937	-1,878 -1,878 -1,937	-1,878 -1,878	3 -1,87£	2.45 -99 -12 -99 -12 -88 -2.23 	30 -13 30 -13 30 1 2,10	52 2.1 54 2.1 55 2.2 56 2.2 57 2.1 58 3.2 58 3.2	520 2, 101	104 129 356 356 36 36 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38	-208 -208 -208 -2148	3,338 -167 -167 3,004 -435 -435 -435 -2,259	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	8 3,338 7 -167 7 -167 4 3,004 3 -435 5 -435 5 -435 9 2,569	15 -435 15 -435 16 -435 17 -167 18 -435 19	8 3,80: 7 -19: 7 -19: 4 3,42 5 -1,11: 5 -1,11: 9 -2,3:0	448 1 02	-1,888 4,584 -229 -229 -229 4,125 -192 -192 -3,934	-1,888 4,584 -229 -229 4,125	-192 -192 -192 -192 -192	4 4,58 9 -22 9 -22 9 -22 5 4,12 2 -19 2 -19 2 -19 4 3,9	229	-192 -192 -1934	-1,888 -1,4,584 4.1,4,584 4.1,	,888 ,584 -2229 -2229 ,125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Cests Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Sustaining Capital Costs Total Capital Costs Sustaining Capital Costs Molybdenum Autoclave Total Capital Costs Sustaining Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 0% DROR NPV @ 5% DROR NPV @ 10% DROR NPV @ 10% DROR	\$ M -431 \$ M -1,058 \$ M -161 \$ M -294 \$ M -294 \$ M -162 \$ M -98 \$ M -162 \$ M -155 \$ M -87 \$ M -866 \$ M -534 \$ M -1,407 \$ M -344 \$ M -1,315 \$ M -374 \$ M -4,695 \$ M -4,695 \$ M -517 \$ M -365 \$ M -11,727 \$ M -365 \$ M -120 \$	-5,834 -6,710 -4,895 -4,895 -11,726 -16,421 -88,545 -13,866 -7,507 -5,562 -2,987	-44 -53 784 -176 -176 -176 -608	-44 -53 784	-44 -53 784	-4-4-5-7-88 -4-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	14	44 53 84 84 76 6 - 76 - 008	-44 -53 -784 	-44 -53 784 -176 -176 -176 -608	-144 -53 784	-44 -53 784 -176 -176 -176 608		103,629 103,629 32,247 21,119	-1,878 -1,878 -1,878 -1,937	-1,878 -1,878 -1,937	-1,878 -1,878	3 -1,87£	2.45 -99 -12 -99 -12 -88 -2.23 	30 -13 30 -13 30 1 2,10	52 2.1 54 2.1 55 2.2 56 2.2 57 2.1 58 3.2 58 3.2	520 2, 101	104 129 356 356 36 36 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38	-208 -208 -208 -2148	3,338 -167 -167 3,004 -435 -435 -435 -2,259	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	8 3,338 7 -167 7 -167 4 3,004 3 -435 5 -435 5 -435 9 2,569	15 -435 15 -435 16 -435 17 -167 18 -435 19	8 3,80: 7 -19: 7 -19: 4 3,42 5 -1,11: 5 -1,11: 9 -2,3:0	448 1 02	-1,888 4,584 -229 -229 -229 4,125 -192 -192 -3,934	-1,888 4,584 -229 -229 4,125	-192 -192 -192 -192 -192	4 4,58 9 -22 9 -22 9 -22 5 4,12 2 -19 2 -19 2 -19 4 3,9	229	-192 -192 -1934	-1,888 -1,4,584 4.1,4,584 4.1,	,888 ,584 -2229 -2229 ,125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Costs Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Supital Costs Sustaining Capital Costs Open Pit Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 75 DROR NPV @ 75 DROR NPV @ 75 DROR NPV @ 76 DROR NPV @ 10% DROR IRR	\$ M	-5,834 -6,710 -4,695 -4,695 -11,726 -16,421 -88,545 -18,666 -7,507 -5,562 -2,987 -15,2	-44 -53 784 -176 -176 -176 608 83,072	-44 -53 784	-44 -53 784	-4-4-5-7-88 -4-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	14	44 53 84 84 76 6 - 76 - 008	-44 -53 -784 	-44 -53 784 -176 -176 -176 -608	-144 -53 784	-44 -53 784 -176 -176 -176 608		103,629 103,629 32,247 21,119 17,182	-1,878 -1,878 -1,878 -1,937	-1,878 -1,878 -1,937	-1,878 -1,878	3 -1,87£	2.45 -99 -12 -99 -12 -88 -2.23 	30 -13 30 -13 30 1 2,10	52 2.1 54 2.1 55 2.2 56 2.2 57 2.1 58 3.2 58 3.2	520 2, 101	104 129 356 356 36 36 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38	-208 -208 -208 -2148	3,338 -167 -167 3,004 -435 -435 -435 -2,259	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	8 3,338 7 -167 7 -167 4 3,004 3 -435 5 -435 5 -435 9 2,569	15 -435 15 -435 16 -435 17 -167 18 -435 19	8 3,80: 7 -19: 7 -19: 4 3,42 5 -1,11: 5 -1,11: 9 -2,3:0	448 1 02	-1,888 4,584 -229 -229 -229 4,125 -192 -192 -3,934	-1,888 4,584 -229 -229 4,125	-192 -192 -192 -192 -192	4 4,58 9 -22 9 -22 9 -22 5 4,12 2 -19 2 -19 2 -19 4 3,9	229	-192 -192 -1934	-1,888 -1,4,584 4.1,4,584 4.1,	,888 ,584 -2229 -2229 ,125
Operating Profit Royalties and Local Production Taxes Tech 4% pre-payback, 5% post-payback Local Production Taxes (5%) Gross Profit Cests Capital Costs Mining Process Molybdenum Saration Secondary Gold Plant Infrastructure Tailings Pipelines Access Road Port infrastructure Port process Power generation Indirect costs Contingency Sub-Total Capital Costs Molybdenum Autoclave Escalation/De-escalation Adjustment Outsourced Infrastructure Total Capital Costs Sustaining Capital Costs Open Pt Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Open Pt Processing Infrastructure Waste Management Other Molybdenum Autoclave Total Sustaining Capital Costs Total Capital Costs Net Cash Flow Cumulative Cash Flow NPV @ 7% DROR NPV @ 7% DROR NPV @ 7% DROR NPV @ 7% DROR NPV @ 10% DROR IRR	\$ M -431 \$ M -1,058 \$ M -161 \$ M -294 \$ M -294 \$ M -162 \$ M -98 \$ M -162 \$ M -155 \$ M -87 \$ M -866 \$ M -534 \$ M -1,407 \$ M -344 \$ M -1,315 \$ M -374 \$ M -4,695 \$ M -4,695 \$ M -517 \$ M -365 \$ M -11,727 \$ M -365 \$ M -120 \$	-5,834 -6,710 -4,895 -4,895 -11,726 -16,421 -88,545 -13,866 -7,507 -5,562 -2,987	-44 -53 784 -176 -176 -176 608 83,072	-44 -53 784	-44 -53 784	-4-4-5-7-88 -4-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1-7-1	14 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4 -4	14	44 53 84 84 76 6 - 76 - 008	-44 -53 -784 	-44 -53 784 -176 -176 -176 -608	-144 -53 784	-44 -53 784 -176 -176 -176 608		103,629 103,629 32,247 21,119	-1,878 -1,878 -1,878 -1,937	-1,878 -1,878 -1,937	-1,878 -1,878	3 -1,87£	2.45 -99 -12 -99 -12 -88 -2.23 	30 -13 30 -13 30 1 2,10	52 2.1 54 2.1 55 2.2 56 2.2 57 2.1 58 3.2 58 3.2	520 2, 101	104 129 356 356 36 36 37 37 38 38 38 38 38 38 38 38 38 38 38 38 38	-208 -208 -208 -2148	3,338 -167 -167 3,004 -435 -435 -435 -2,259	3,338 -167 -167 3,004	-435 -435 2,569	3,338 -167 -167 3,004	3,338 -167 -167 3,004 -435 -435 2,569	8 3,338 7 -167 7 -167 4 3,004 3 -435 5 -435 5 -435 9 2,569	15 -435 15 -435 16 -435 17 -167 18 -435 19	8 3,80: 7 -19: 7 -19: 4 3,42 5 -1,11: 5 -1,11: 9 -2,3:0	448 1 02	-1,888 4,584 -229 -229 -229 4,125 -192 -192 -3,934	-1,888 4,584 -229 -229 4,125	-192 -192 -192 -192 -192	4 4,58 9 -22 9 -22 9 -22 5 4,12 2 -19 2 -19 2 -19 4 3,9	229	-192 -1934	-1,888 -1,4,584 4.1,4,584 4.1,	,888 ,584 -2229 -2229 ,125

Proposed Pebble Project DEIS Technical Review of Economic Feasibility 39-Year Mine Resource Case, Sensitivity Case 2 Technical Memorandum No. 5, Attachment 5A-2e Page 3 of 4

2011 Preliminary Assessment

39-Year Mine Resource Case, Sensitivity Case 2 - Double Rate of Production

Property			78-Year	Calculated									31	9-Year Ca	se								
Performance	Description	Units			21	22	23	24	25	26	27	28	***************************************			32	33	34	35	36	37	38	39
O																							
Control Cont				6.536																			
Sty blank National 558 558 1																							
## CASH Control Contro																							
Color			6.520	6.536																			
A. Carbon Control Cont				6,526																			
Company Street																							
A. Horsey 9 9 71		ppm	243																				
Marchest																							
Concentration Problems																							
C. 16		70	- 3																				
A. D. C. 120 131 6816 C. 120 132 142 142 142 142 142 142 142 142 142 14																							
## April 1997 1.0 1.																							
Strong				45,610																			
Mode																							
The big Mile 2005 2786		k oz	1,589																				
North Year Nor		M ila	2.025	2.700																			
Construction Cons		OI IVI	2,833	2,788									1							1	l		
Act Mov Move Move			T										T										
Mode																							
Age													-										
Pro													-										
March Social Section March Mar																							
Carl \$ W 193,846	Pd		490.00																				
A. S.M. S.S.S.O. S.S.O.		8.1		422.200									-										
Mode 1, M 37,637			-										-										
Ag																							
Part																							
Total Cross Remans \$3.00 253.08 253.08 253.00																							
Resistance Charges M 19938 19937 19157 6472 64			233 908	222 510																			
Net Smetter Reserved M																							
Properting Cost Congrains S.M. 95,065 90,064 2261 2361 2267 2475 2476 2476 2476 2476 3761 37					6,472	6,472	6,171	5,870	5,870	5,870	5,870	5,870	5,870	5,870	5,526	5,526	5,526	5,526	5,526	5,526	5,526	5,526	5,526
Festor Gold																							
Contacting Cost (pressed)		\$ M	-96,063	-96,063																		-3,763 0.8	-3,763 0.8
Poperating Profit 1775/00 1775/00 1775/00 4584 4584 4358 4358 4312																						-3,010	-3,010
Test 4th pre-payback 5,844 2.29 2.29 2.18 2.07 2.07 2.07 2.07 2.07 2.07 2.07 2.07 2.07 2.07 2.08 1.26			117,906	117,510																		2,515	2,515
Local Production Tasses (5%)							211																
Cost																						-126 -126	-126 -126
Capital Costs				-0,710																		2,264	2,264
Mining	Costs																						
Process		* * * *	424																				
Molysderum Saration																							
Secondary Gold Plant																							
Tailings																							
Pipelines																							
Access Road													-										
Port infrastructure																							
Power generation	Port infrastructure	\$ M	-155																				
Indirect costs																							
Contingency S M -866													-							-			
Sub-Total Capital Costs S.M -5,757																							
Escalation/De-escalation Adjustment S M 121	Sub-Total Capital Costs	\$ M	-5,757							_													
Outsourced Infrastructure																							
Total Capital Costs S.M. -4,695 -4,695 -4,695													-							-			
Sustaining Capital Costs SM -7,225 SM -7,225 SM -517 SM -5165													<u> </u>										
Processing \$ M -517				1,000																			
Infrastructure																							
Waste Management													-							-			
Other \$ M -180																							
Molybdenum Autoclave \$ M -276 -11,726 -192 -192 -211 -230 -230 -230 -230 -230 -352 -35																							
Total Capital Costs -16,421 -192 -192 -211 -230 -230 -230 -230 -230 -230 -230 -230 -352 -35	Molybdenum Autoclave	\$ M	-276																				
Net Cash Flow		\$ M	-11,727																			-352	-352
Cumulative Cash Flow 54,364 58,298 62,009 65,497 68,985 72,474 75,962 79,451 82,939 86,427 88,339 90,250 92,161 94,072 95,984 97,895 99,806 101,7 NPV @ 78 DROR \$ M 12,941 13,866 NPV @ 78 DROR \$ M 6,812 7,507 NPV @ 8% DROR \$ M 4,964 5,562 S S S S S S S S S S S S S S S S S S S																						-352 1,911	-352 1,911
NPV @ 0% DROR \$ M 87,329 88,545 <td></td> <td></td> <td></td> <td>50,343</td> <td></td>				50,343																			
NPV @ 7% DROR \$ M 6.812 7,507 NPV @ 8% DROR \$ M 4,964 5,562	NPV @ 0% DROR																						
NPV @ 8% DROR \$ M 4,964 5,562																							
													 										
													 										
IRR % 14.5 15.2			14.5	15.2																			
Payback years 6.1 6.3																							
Net Cash Flow After Tax	Net Cash Flow After Tax	L	L				L				L		<u> </u>	L		L		L	L	L	L	L	L